Proceedings of the Fourth Annual Research Conference of Jimma University
Organized by Jimma University
February 7-8, 2013
Jimma, Ethiopia

Theme: "Meeting National Development Challenges through Science, Technology & Innovations"

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Proceedings of the Fourth Annual Research Conference of Jimma University

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Opening Session

- Welcoming Speech
- Opening Remarks
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Opening Session

Welcoming Speech

By

Dr. Berhanu Belay

Senior Director for Research, Community Based Education and Graduate Studies

Dear Dr. Fikre Lemessa

President of Jimma University

Conference participants

Ladies and Gentlemen

I am deeply moved and honored to make this welcoming speech on the behalf of the organizing committee of the Fourth Annual Research Conference of Jimma University. On the behalf of the organizing committee, I take this opportunity to welcome each and every one of you in this august gathering.

Dear Participants

This year’s Annual Research Conference is unique which have attracted a number of policy makers in which we have some issue to address and in turn the policy makers will address it from policy perspectives. We have also some important issues which will be channeled for the technocrats and academicians for practice. I would reiterate the fact that, every one of us has an issue to take home and play our role accordingly.

Dear Participants

This year we selected the theme of the conference entitled ‘Meeting development challenges through science, technology and innovation’

The same topic was presented by Prof Gebissa Ejeta as a public lecture during the inauguration of his honorary degree at Jimma University. We realized that, the topic is so catchy and essential for our future research and development effort and we organized ourselves to look the topic in broader perspective. We requested permission from Prof Gebissa Ejeta to use the topic and serve as a theme of the fourth Annual Research Conference of Jimma University. We received permission from Professor Gabissa and circulated the theme among the research coordination group and got a wider acceptance. We invited Professor Gebissa to present on this important topic focusing on how food security is crucial in meeting development challenges. However, due to his busy schedule and other commitments he was not unable to share his rich experience. In this juncture, I would like to extend my heartfelt gratitude to Professor Gebissa to give as a permission to use the topic as a theme for the fourth Annual Research Conference.

Dear Participants

We have development challenges in the third world including Ethiopia. The challenges may emanate from wider perspectives that need a comprehensive approach to meet the challenges. Democracy and governance, food security, Communicable and non-communicable diseases, quality and relevance of education, environmental degradation and climate change are some of our development challenges. We believe that the challenges could be ameliorated through research, development and technology.
transfer. We believe that, the challenges need a consorted effort by implementing a multidisciplinary approach on research and development. Do not forget also the facts that, contribution of different institutions to meet the national challenges for development are crucial.

Dear Participants

Like the past conferences, the first half day will be allocated to address the lead papers that will reflect the theme of the conference. The lead papers focused on Food security, educational innovation and adoption, the role of new technologies as a solution to construction to health sciences research, issues on globalization, social accountability and sustainability of biodiversity. In addition to that, we will have seven syndicate groups which are organized on college/institute bases. We have posted the titles of each syndicate group and fill free to attend the syndicate group which you are interested to follow. Furthermore, more than 75 papers will be presented in the syndicate groups. We will have a feedback and general discussion forum, where each group presents the outstanding issues tabled in the group that needs further intervention through research and policy arrangement. The general discussion will focus how we can make the ARC more vibrant and the means of collaboration among institutions and direct the dissemination of research output.

Dear participants

We invited more than 40 individuals representing their institutions. We will expect sharing of experience from our collaborators to compliment for a common goal. The development challenges are immense and we can tap the challenges and change into opportunities through collaboration. I would like to reiterate the fact that, JU is committed to work closely with our collaborators under win-win situation.

Finally, I would like to thank you, the workshop participants; your presence is vital that will contribute for the success of the workshop. May I then with great respect invite Dr. Fikre Lemessa President of Jimma University to officially open the workshop?

Thank you
Opening Remarks

By

Dr. Fikre Lemessa

President of Jimma University

HE Dr. Adugna Wakjira, Deputy Director-General of Ethiopia Institute of Agricultural Research and member of Jimma University Governing Board.

Invited scholars

Invited stakeholders representatives

Ladies and Gentlemen

It is a great honor and privilege for me to welcome you all guests coming from abroad and each corner of Ethiopia to this Annual Research Conference of Jimma University. As you all know, Annual Research Conferences are one of the strategies for researchers, educators, entrepreneurs and policymakers to exchange their views freely about issues related to research, policy and development endeavors. As a result, Jimma University has been holding Annual Research Conferences so that its research results and experiences are shared among stakeholders and its contribution to the community and the nation is maximized.

Jimma University is a public higher educational institution with the mandates of teaching research and delivering services to the community. The University is engaged in diverse research undertakings to alleviate various societal problems. It has laid down the policy directives for research and the guidelines and procedures for the implementation of the directives. These documents are believed to indicate how to develop need based researches and how they have to be carried out with clear implementation procedures.

The University has mainly devoted its research budget in nurturing the research skills of its staff along with tackling societal problems. The trend has to be changed and a new approach has to be sought so as to lead us to: bringing significant impact on the life of the society. Even though there exists a financial constraint associated with the funding of thematic area based research projects, we have to focus on allocating the meager resources to bring impact on the existing societal problems.

This year, the theme of our research conference is entitled “Meeting National Development Challenges through Science, Technology and Innovations”. Research in science and technology and the innovations to come up should contribute to alleviating development challenges of the country. I hope the plenary speakers and the presentations in the parallel sessions will show how science, technology and innovation can help in meeting the development challenges the country is facing currently.
Dr. Fikre Lemessa, President of Jimma University

Within the endeavor in realizing the Growth and Transformation Plan (GTP) of the country, research outputs have their own impact in indicating gaps and alternative approaches for better implementation strategies. It is natural that we engage in this healthy debate as we search for the best solutions to overcome the multitude of difficulties.

Jimma University is the national pioneer in Community Based Educational philosophy which is cherished innovative means to make education relevant to societal needs and priority based research to our national development effort. The University is devoted in contributing to demand driven researches in order to bring quality education and national development through disseminating relevant research outputs and technologies to all concerned stakeholders and academia in Ethiopia and elsewhere.

With this 4th annual research conference, I hope there will be inputs that we may get on how we have to engage in research to bring about change and the need for further linkages between research and development.

**Dear participants,**

I would like to reassure you that “research will remain one of the core activities on which the University works hard to bring stronger socioeconomic impact on the society.

I wish this year’s conference to be an exciting forum where important research issues with the help of frontier research papers can be presented. So, let me conclude by saying that I am so much pleased to see you all here, and I am sure you will have very productive discussions over the next two days.

Saying so, I declare that this Fourth Annual Research Conference of JU is officially opened. I wish all guests coming from abroad and other cities of Ethiopia a pleasant stay in the historical city of Aba Jifar- Jimma.

Thank you all for your attention!
Key-note Address

By
Adugna Wakjira (PhD)
Deputy Director-General of Ethiopia Institute of Agricultural Research (EIAR) and member of Governing Board of Jimma University.

Dr. Fikre Lemessa, President of Jimma University,

Educators and Researchers,

Conference participants,

Ladies and Gentlemen,

It is a great pleasure and an honor to get this chance of delivering key-note address to these respected participants of the 4th Annual Research Conference that is aimed at:

- communicating research results to the stakeholders,
- measuring progress and achievements,
- influencing the teaching-learning processes,
- reviewing and refining future research activities and
- inspiring individuals, community and the entire nations towards knowledge-based development endeavors.

Indeed, Jimma University is aspiring to be the center of excellence and the leading Universities among the Ethiopian High Learning Institutes (HLIs), and also competing to be one of the best universities both in Africa and across the globe. It is very true that Jimma University is one of the most reputed HLIs in Ethiopia, producing highly qualified human resources and significant research outputs for this nation of ours. We know that most of our senior educators, researchers and professionals are the product of this University. In fact, at this moment, Jimma University is one of the leading universities in Ethiopia and this must continue, with its influential leadership roles and responsibilities in education, research and development aspects.

Dear Conference Participants

Research is a key tool and instrument in improving quality of education, enhancing collaboration and participation, and attracting funds and essential resources for advancing the University in the required direction. It also helps to link the University professionals with the surrounding community to support the economic and social progress of the nation. Hence, research is a must to do, but not a luxury. However, it has to be a problem-solving and contribute to the social developments of Ethiopia.
The challenge of feeding the ever increasing population against the backdrop of climate change, environmental degradation, fragile economic situations and shrinking natural resource require research and education partnerships of higher levels than we had before. Traditional ways of education and research in classes and laboratories may not be enough. We need education, research and other partnerships that can address the constraints of the farming community along the entire value-chains, from improving productivity to reducing the post-harvest losses, enhancing processing, transport and marketing, in collaboration with the relevant stakeholders.

Dear Participants

This year’s 4th annual conference is being undertaken, when we are in the middle of implementing our five year Growth and Transformation Plan (GTP), with broad objectives of accelerating the social and economic development of Ethiopia. The achievements recorded so far are encouraging and good indicators for meeting our target, and to confront the inevitable challenges. In facts, Jimma University is discharging its responsibilities of teaching, research and developmental services in line with the objectives and strategies of our GTP. Community-based education, research and development are the regular motto of Jimma University. This excellent and unique feature of this University is very relevant to meet the national development of Ethiopia through the new tools of science, technology and innovation. Indeed, this is the real expectation of the public and the government from HLIs in order to overcome poverty and backwardness.

Dear Participants

Quality education, research and development services are the critical and timely requirements raised by public, government and other development partners. Hence, we need to gauge our progress and assess the remaining gaps for scoring further improvements. So far, we have been appreciating the past achievements and current efforts on community-based education (CBE). Nevertheless, allow me to put forward some points for continued and aspired improvements within and around Jimma University. Then, if CBE of JU has done enough, why:

some students commit silly mistakes of pulling down precious building in search for a picture in the toilet? How come we hear wrong doings of undisciplined students and staff? Is it justifiable to hear low level performance, while many influential educators are around?

slow progress with Jimma’s town road construction? Where are the leadership and influential positions of Jimma University and its communities?

- poor education quality in elementary, secondary, and high learning schools of Jimma areas?
- poor working disciplines and youth immigrations out of resourceful areas like Jimma?
- coffee wilt is expanding and did you do your part in this regard?
- didn’t you recognize and reward the Sheko-Mejengir rich cultural heritage of environmental (forest) protection?
The list can continue, and you can keep asking and answering! These points were just to remind the responsibility of HLIs and their educators that remains immense and much more are waiting in the future. Obviously, some of these points may not be the direct responsibility of JU or HLIs but one way or the other, these factors affect all and we can’t ignore them. This shows that the social responsibility and accountability of HLIs in directing the development agenda and leading the nation towards better economical and social progress are very crucial. The future expectations are also high. Hence, we need to keep building on past achievements and move forward with positive changes.

It is good to reemphasize that Ethiopian economy will continue to flourish through the committed efforts and hard working capacity of its educative, research and development institutions, such as JU that possess high potentials for accelerating the pace of social progress. Accordingly, policy makers, educators, professionals and ordinary citizens are currently mobilized to acquire holistic economic developments via accomplishing our five years GTP in a successful manner. To this end, everyone has to look into whether he/she is contributing enough or not in this nation-wide development agenda.

Dear Participants

While analyzing our circumstances, we can also learn general principles and practices of teaching-learning process and new development directions that may be universally instructive from other developed countries, like Japan though specific features can only work under certain conditions. I had the chance to visit and read about the Japanese educational experiences, and hence felt happy to share the synopsis with the readers, though it was not presented during my speech. Hope some insights will be acquired.

The lessons derived from Japan’s experience with education are useful for analytical, better understanding and adopting where it applies. The deeper purposes of the system appear to go beyond the learning and development capacity of students, to deep involvement and support of members of a society with values based on ethical behavior, meritocratic advancement and social cohesion. The entire system is aligned not just to produce high students but also to help the whole country realize its development vision, values and goals, as briefly presented below.

Shared vision and belief that education is the key to the country’s future

Japan’s total commitment to children is not just rhetoric, but a concrete and enduring priority, for which individuals and the nation as a whole are prepared to make real sacrifices. It is the main reason that Japan has access to a first class teaching force, that Japanese students are superbly supported at home, and that the schools are well resourced. This commitment is the foundation of the Japanese education system.

Consistent international benchmarking

Japan is committed to continuous international benchmarking of education systems. Starting from the Meiji government to the present, Japan has succeeded in no small measure because of its determination to know what the best performers are doing, and to adapt the best of what they find to
the Japanese setting, weaving them together into a coherent and powerful whole. Thus, one can learn more and do the better.

**Incentives for teachers and students**

Japanese students, from the youngest age and all the way through their entire working life, have very strong incentives to take tough courses and to work harder and better. Doing well in exams is a paramount requirement for getting a good job. In some ways, this is the core story of the Japanese education system. If those incentives were not present in Japan, the outcome would be very different. It is worth noting that other countries provide equally strong incentives for their students to take tough courses and work hard in school, but do not have students who are inspired and happy in school, like Japanese students. The same is true with teachers and these two factors together make for a nation full of people who want to learn and improve throughout their lives.

**A coherent and focused curriculum**

The Japanese have paid more attention to the details of the national curriculum than most other countries and they have insisted that this curriculum is actually taught. The curriculum is coherent, carefully focused on core topics and their deep conceptual exploration, logically sequenced, and set at a very high level of cognitive challenge.

The result is that Japanese high school graduates have a level of mastery of the subjects that rivals that of college graduates in many Western countries.

**Effort and expectations**

The Japanese, like most East Asians, believe that academic achievement is more a matter of effort than natural (genetically-endowed) ability. They therefore demand that the effort be made and have high expectations of all their students. Students of whom much is expected – all students – achieve well.

**Resource allocation priorities**

The Japanese spend less on education than other industrialized nations, but they get more for that money. One of the many reasons for this is the careful way they allocate that money. Compared to other advanced industrial nations, they spend more on teachers and less on school buildings and facilities, non-teaching staff, central office specialists and administrators, full color glossy textbooks and so on.

**Organization of instruction**

Unlike teachers in the rest of the world, Japanese teachers believe student performance is better with bigger classes, at least in certain subjects. This is because more students are likely to come up with a wider range of problem-solving strategies from which other students can learn. And the variety of ideas generated by more students can be used to spark lively discussions. In science classes, for
example, there will be a wider range of outcomes from lab experiments that also can be used to explore problem solving strategies and promote deeper understanding of the topics under study. This also makes it possible for Japanese teachers to have more time to plan, to work with other teachers, to work on one-to-one basis with students who need individual help, and to engage in lesson study, all of which also improve the outcome for students.

**High expectations from students of all abilities**

Like most East Asian countries, Japan has roughly half the proportion of the student cohort assigned to special education as is the case in some Western countries. Some in the West have decried this as inattention to students who need and deserve extra help. That may be true in some cases, but there is a lot of evidence that many students assigned to special education classes in the West have very low levels of achievement despite being the recipients of much more spending, simply because their teachers have very low expectations from their achievements.

However, Japanese teachers, work hard to adjust instruction to the needs of each student. The underlying assumption is that all, or very nearly all, students can learn to high standards. In many Western countries, where the assumption is that student achievement is a function of inherited learning capacity, some students who could be achieving at much higher levels do not do so because they are given a more diluted curriculum. In the case of special education students this can be taken to an extreme.

**Professional growth of teachers as powerful engine for student performance**

Japan is a laboratory for the idea of continuous improvement of teaching practice. The incarnation of that idea in Japanese schools is lesson study. This practice undoubtedly contributes in important ways to the high quality of instruction in Japanese schools.

**Careful attention to school-to-work transition**

Japan has an unusual and highly effective system for moving students into the workforce. The idea of lifetime employment makes it worthwhile for employers to invest heavily in the continued education and training of young people joining their workforce fresh from school or university. This system results in low rates of youth unemployment, and works well because students are already accustomed to working hard. It also produces workers who are used to being loyal team members, working collaboratively with others, showing up on time and working to deadlines. It produces students who know how to learn and come to work with a remarkable set of skills.

**A moral and ethical education for life**

The Japanese have repeatedly asserted that the most important dimension of their system is the moral dimension: how people should behave and how they should relate to one another. The entire curriculum is covered with the moral education agenda of the Japanese government. Though there are courses on moral education in primary schools, this agenda extends far beyond them. Even in high
schools, where there are no specific courses on moral education, the national curriculum emphasizes that all activities should take moral education into consideration.

Everywhere in schools there is evidence of efforts to reward hard work and persistence, to praise students who take on a challenge, to engage students in serving their school and fellow students and to take responsibility for helping others, to reward modesty and to give others credit for one’s own good work. In many different ways, students are taught to respect their elders and their teachers, to do what is right, to be orderly and organized. It is not hard to imagine how this sort of attention to common moral standards can affect many aspects of social life, from business ethics to health care, sustainable environment to crime. Some countries do this explicitly, some implicitly, but it is worth considering what might happen to a country that ignores this aspect of their children’s education. Apart from schools, moral briefing was also included in the orientation programs for foreign visitors to Japan and I found it useful and interesting.

**Social capital as a powerful accountability mechanism**

There is a very strong social accountability in schools of Japan. Students are very accountable to teachers and parents. Teachers are accountable to each other in a system in which all the teachers in the school know just how good or bad the other teachers’ teaching really is because of lesson study process. Everyone knows how the high schools and universities are ranked and so everyone knows how to rank the institutions and teachers who prepare students for those high schools and universities. The performance of the students on those entrance exams is there for all to see in a world in which those results matter hugely.

As the results of the above efforts and commitments, Japan is clearly among the world’s most advanced industrial economies. It is among the world leaders for the development and application of the most advanced technological systems. This was one of the goals Japan set for itself in the Meiji Restoration; those who launched it realized from the start that those aims would not be achieved without a first rate, highly inclusive and aggressively meritocratic education system.

Japan has not followed exactly the education continuum of their predecessors’. It has skipped the typical slow upgrading of teacher quality, having inherited a system from the Tokugawa era in which the Samurai class staffed the schools. It also bypassed the typical slow progression from a system of school organization based on the usual feudal orders straight to one that makes it possible for students from every social class to gain access to elite education opportunities. Japan was also ahead of many other nations in embracing at least some aspects of modern industrial work organization, especially in how teachers work with one another in teams to improve instruction, and in the professional norms governing the work of teachers.

On the other hand, Japan has been reluctant to devolve authority to schools as aggressively as some other countries did, and it also found it harder to create schools that develop independent, creative students than other countries. This may reflect a clash between the demands of a creative culture in which individual initiative is highly valued, and the Japanese culture in which the approval of the group is typically sought before aggressively advancing one’s own ideas. Japan has found a
distinctive path which is congruent with its values and commensurate with the economic and societal progress it desires to achieve. While there may be specific features of the Japanese system that are unpalatable, it is a system which bears careful scrutiny.

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In general, the Japanese education system has contributed to them with very high levels of school and academic achievements. Their students are shaped to enjoy schools the most. Consequently, the system has produced one of the world’s best-educated and most productive workforces. It has exceptionally low crime rates and a very strong social order. It has high rates of citizen participation and a citizenry that has an unusually sophisticated grasp of political issues. Parents in Japan participate in their children’s education and partner with teachers to an unusual degree. The country has one of the world’s most admired curriculums. Though the system continues to evolve, the methods used to build this system should surely be considered by any country that wants to match its achievements. Therefore, there are a lot to learn and apply relevant experiences from countries like Japan to accelerate our research and development paces toward the needs of our people and country. Let’s keep learning and advancing!

Thank you.
Section I

Plenary Papers
Section I: Plenary Papers

Some Notes on How Africa May Benefit From Globalization

By

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Abstract

Today, the whole world has increasingly come together with the development of science and technology. Consequences of technological advances and innovations are no longer the sole properties of the innovators but its benefits reach out to millions who could afford to pay for. The rapid growth of information technology and modern transportation systems has made production, distribution, trade and investment more integrated and interlinked. This integration and interdependence of different nations with widely varied social, economic, political and cultural developments brought about a phenomenon known as Globalization. The term became quite fashionable in the 1990s in the wake of fast international economic growth following the collapse of the Cold War.

Different writers define the concept differently but as most scholars agree, globalization is the accelerated growth of economic activity across national, regional and international boundaries expressed by the increased movement of tangible and intangible goods and services, including ownership rights, through trade and investment and often through migration of people. It is often facilitated by lifting government impediments to that movement and/or by technological process. The initiatives of individual actors, firms and banks are driven in pursuit of profits often through competition (Charles Oman, 1994:6). Globalization represents a stage in international economic interactions with an intensive increase in networking through telecommunications and large-scale use of computers, the dominance of big international corporations that deploy investments, production and other activities relatively freely to all corners of the globe.

Apparently the definition of globalization generally indicates that developing countries such as Ethiopia could not stop the influence of deepening globalization because it even involves the erosion of the autonomy of the sovereign state (Patman, 2006: 9). It is therefore quite impossible for any country any where to lock up its doors to globalization.

This paper highlights the position of African countries in relation to globalization and some important strategies which they could employ in order to benefit from globalization. It is also significant to note the negative effects of globalization such as the devastating consequences of global warming and climate change which is no more limited to national boundaries but rather rich and poor Africans face...
its dire impacts. This calls for strengthening Climate-Resilient Green Economy initiative to protect African countries from its adverse effects.

I. Introduction.

In recent years globalization has increased the growth of wealth and prosperity but not for all continents and countries. Particularly, in the least developed countries of Africa and the rest of the world, the worsening of the existing imbalances have impeded development and aggravated poverty. Though the global market is largely out of reach for Africa, many of the disadvantages of globalization have already hit the continent. Undoubtedly, globalization heightens the risk of instability and marginalization. Peripheralization of the Sub-Saharan countries is reflected in their very small share of world trade (about 2%), very low output and foreign investment (1%). Africa’s external debt and the unfulfilled promises of foreign assistance at a time when most countries cannot continue their reform and development efforts without financial support has exacerbated the situation (Mohammed Daous, 2001: 4; Seyni N’Diaye, 2001: 18; Salim Ahmed Salim, 1999: 4). There is an underlying fear that Africa could remain potentially impotent and marginalized with its import-export representing only a minute proportion of world trade. Salim Ahmed Salim, the OAU Secretary General at the opening speech of the African Development Forum on October 24, 1999 had analyzed the challenges facing Africa in the new millennium owing to the globalizing world system as follows:

.... At the economic level, the sad reality is that at present, the size of Africa’s involvement in global trade is only 2 percent reflecting the extent of its marginalization in on-going arrangements to reorder the world’s economic arrangements. This is at a time when international support for Africa’s development efforts has dropped precipitously, and destabilizing conflicts are raging in some parts of the continent (Ibid., 5).

Sub-Saharan Africa entered the new millennium trailing far behind the other regions and facing enormous development challenges (Evangelos Calamitsis, 2001). The continent has a long way to go to make up for the ground lost over the past three decades and begin to catch up with other countries. The region’s overall performance in particular is well below what is required to achieve the millennium development goals for poverty reduction, education, health, gender equality and environmental sustainability by 2015, the target date. To attain these goals and more especially the goal of reducing the proportion of people living in extreme poverty by half between 1990 and 2015, Sub-Saharan African countries will have to raise their real GDP growth rate by 7-8% a year on sustainable basis (Ibid., 11, Salim, 1999: 1-8).

II. How Should Africa Handle Globalization?

How Africa decides to approach globalization must be determined by its most urgent goals of accelerating economic growth, development and eradicating the wide spread, deep and severe poverty in many countries. Poverty remains Africa’s most pressing problem and the continent needs to achieve rapid and sustainable growth as quickly as possible. Obviously, the challenges to Africa must be met with rigorous actions to secure full advantage of the benefits of globalization minimizing the
risks. Creating political, social and cultural conditions to promote economic activity is necessary. The main questions Africans should ask themselves about globalization include: Can Africa continue to remain isolated as the winds of change sweep through the global economy? What are the advantages and disadvantages of integration into the global economy? Which of the developed countries have favorable policies towards Africa? How can the risks of globalization be minimized? What are the most important lessons Africa can learn from the growth and crises experienced by other countries so that it can more successfully manage the unavoidable difficulties of globalization? To what extent is Africa already integrated into the global economy? How can it improve its competitiveness in the international trade? Is globalization a remedy for all Africa’s economic problems and others? What policy measures must Africa put in place to derive maximum benefit from globalization?

Some economists argue that it is odd to regard Africa as a victim of globalization; rather they say it is a victim of lack of globalization and further explain that its geographical and economic isolation is surely the salient characteristic of its problems (The Economist, 2001: 92). It is clear that globalization has enriched the world scientifically and culturally with economic benefits to many people. The challenges of globalization cannot be reversed by withholding the great advantages of the contemporary technological advancement, international trade and exchange. It is impossible to have a prosperous economy without extensive use of market economy. It therefore makes a better sense to extend the scope of globalization, addressing the causes of Africa’s isolation than limiting or reengineering the process of global growth. A fairer distribution of the fruits of globalization is crucial to relieve its challenges. But this depends on the good will and genuine concern of all the countries and peoples of the developed world.

Europeans took much time to adopt the new market economy. Today, Africans are, however, being called upon to do everything concurrently: to liberalize their economy; to establish democratic institutions and make them function effectively; keep up with the rest of the world in trade and others. The demands are so huge with daunting tasks for African countries. Therefore many countries hesitate in opening up their economies arguing that any benefits from globalization may take some time to materialize while its negative impact is more immediate. President Compaore of Bukino Faso, speaking as chairman of the OAU pleaded for time, arguing that Africa should join the globalization process at a time with more measured pace, as its capacities develop (Harsch, 2001: 121). Consequently, Africa should determine its own course deliberately and join the globalization process in less subordinate position, even if that means integrating into the global economy slowly.

In analyzing how Africa can maximize the benefits of globalization it is significant to stress that globalization is not a remedy. It will not solve all economic, social and other problems of Africa. Integration into the global economy is necessary but not a sufficient condition for growth and development. Making globalization operational in Africa minimizing its risks is, therefore, one of the most urgent tasks facing the continent’s policy makers. Although a growing body of opinion suggests that the odds for Africa’s integration are so unfavorable that marginalization is inevitable, it is worthwhile to discuss how Africa can transform itself to gain advantages of globalization by minimizing the risks in the process to accelerate economic growth and reduce poverty.
III. International Trade and Capital Flow

For most countries the avenue of economic integration is international trade. Globalization makes an economy more open and deepens its integration with the rest of the world. International trade will help an economy to diversify its exports with comparative advantages assisting it to become less dependent on a single export product or market. Moreover, integration with international market helps an economy to be less dependent on the domestic market. International trade, therefore, remains the main vehicle for Africa’s participation and integration with the global economy. Nevertheless, Africa’s trade is concentrated on a narrow range of agricultural and mining primary products and within this narrow range Africa’s market share has even been shrinking. During 1966-69, Africa’s average share of total world exports was 5.3% and of imports 5.0%. During 1990-98, however, these figures dropped to 2.3% and 2.2% respectively. This decline was attributed to the restrictiveness of Africa’s trade regimes, slow growth of per-capita income, high transportation costs, and the continent’s distance from major markets, among others. Moreover, although Africa made substantial progress towards trade liberalization in the 1990s its trade policies remained more protectionist than most of its trading partners and competitors (S. Ibi Ajayi, 2001: 7; Daouas, 2001: 4-5).

To tackle Africa’s trade problems require a two pronged policy reform. At a national level, countries need to liberalize trade, removing trade barriers, adopting appropriate exchange rate policies, diversifying and increasing the quantity and the quality of exports. At the international level, African countries should decide where they should concentrate their efforts: either on the production and export of primary products or make a determined shift towards industrialization and the promotion of manufactured goods.

Since early 1990s Africa has made substantial progress in liberalizing trade. In 1990, more than 75% of the continent’s countries had trade regimes classified as restriction based on IMF’s Index of Aggregate Trade Restrictiveness and none had trade regimes that was classified as open. Many of these countries have, however, adopted ambitious structural adjustment programs, which included efforts at trade reforms. Now, only about 14% of African countries’ regimes are classified as open (Robert Sharer, 2001: 14-17). Consequently, on the average, the trade regimes of African countries still remain significantly more protectionists than others, including Africa’s major trade partners, while 61% of the countries outside Africa have trade regimes classified as open (Ibid).

It is important to note, however, that openness may also make an economy more vulnerable to external shocks such as abrupt changes in the terms of trade that can reduce growth drastically. If the shocks directly affect certain sectors such as agriculture it would have serious effects on the economy. African countries should, therefore, develop a well coordinated trade strategy and play a more active role in both demanding and making concessions in trade negotiations and the industrialized countries should also eliminate restrictions against imports of African products.

Another avenue to globalization is capital flow. Africa has, however, failed to attract the capital it needs because of negative perception of the continent’s economic and political activities, its poor infrastructure and an inadequate legal framework, particularly for the enforcement of contracts (Ajayi, 2001: 7-8).
Although foreign direct investment in developing countries has increased in recent years, Africa’s share of the total has remained as low as 3% (Ibid.). In their effort to make themselves attractive to more direct investment, African countries must take measures such as expediting the approval process, removing restriction on remittance of profits, providing liberal tax incentives and allowing foreign participation in the privatization of state owned enterprises, liberalizing investment laws, offering fiscal incentives, easing restrictions on capital entry and strengthening banking and financial systems. All these must be done cautiously without necessarily affecting the interests of the citizens, for instance as it is being done in land lease policies of some African countries.

Another important avenue to globalization is through improving fiscal policy. Sound fiscal and monetary exchange policy plays a very important role in the consolidation of economic activities and enhancing competitiveness. A sound fiscal policy mainly enhances tax efficiency and revenue collection through various reform measures, such as curbing tax evasions and exemptions and strengthening revenue administration. It will also reduce unproductive outlays and increases pro-poor spending, thereby improving the quality of public expenditure and reinforcing social cohesion. Through sound fiscal policy, government borrowing from the banking system should be strictly limited, if not eliminated to provide greater scope for bank financing of the private sector and facilitate monetary management (Calamitsis, 2001:12). Concurrently, fiscal policy should keep inflation in check mainly through open market operations and ensuring that interest rates are freely determined by market forces. Fiscal policy can also encourage the establishment of well-structured financial institutions that could offer needed savings and credit facilities, particularly for poor people in the rural areas.

IV. Infrastructural Developments.

Advances in telecommunication and transportation are other important avenue to globalization. It is often said computers, telecommunication and the internet are the beginning of a single global nervous system in a globalized world (Urquhart, 2000:12). The main forces behind globalization are not only the increasing ease of communication and transportation but also the falling cost of communications. The cost of telephone calls has dropped in most countries, and the number of telephones has increased in all regions except Africa. The telephone sector in Africa is characterized by low network penetration rates, obsolete equipment and long waiting lists for telephone lines. As recent as 1996, there were only two lines for hundred Africans (Ajayi, 2001:7-8). To obtain a telephone in Africa one is expected to wait for three and half years on the average which is the longest in the world. Telecommunication’s infrastructure is a conduit to the internet, which lies at the heart of information technology necessary for a market based economy (Ibid., Marc Belanger, 2001: 31). There are about 330 million people in the world on the internet. Africa has, however, about 5 million internet users, out of which 2/3 live in South Africa. (Belanger, 2001: 31). If Africa continues to have the lowest teledensity and the fewest computers of any region in the world, it will remain marginalized and cut off from information, knowledge and technology. Therefore, it will, be unable to compete in the global economy. Complete integration into the global economy requires a functioning, readily accessible and affordable telephone system. Africa must, therefore, take the necessary steps to rectify
its deficiencies in the area. Information technology should be considered not only as part of the solution to the African problem but also as a crucial part (Ibid).

It is quiet significant to note that African countries themselves bear primary responsibility for achieving reforms and development programs in order to pull themselves up and become part of the world. Development partners have also a crucial role to play for Africa’s social, economic and political stability (Daous, 2001:5). As the first step, the industrial countries could support Africa’s efforts to benefit from globalization by allowing the continent’s exports duty free and quota free access to their markets which could enable the heavily indebted countries to integrate better with the global trading system. Gaining open access to the industrial countries’ markets on a more permanent basis would significantly increase investor confidence. Relief from the burden of their debt through cancellation or rescheduling would enable the African countries to save resources that could be allocated to productive investment (Ibid.). Development partners could also provide additional support promoting flows of private capital to African countries, especially foreign direct investment, which instead of generating debt, creates new jobs and often brings new technologies to African countries. If the African countries are to raise their level of technological development, they will need to establish partnership with the advanced industrial countries in the areas of natural resources, particularly minerals. Through the partnership know-how would be transferred from the advanced economies to Africa and would help position the continent’s products to meet global demand and compete internationally. Africa’s development partners could also provide support honoring their existing financial commitments to the reduction of poverty (Ibid).

To have a maximum impact and the best prospects for success, the reform programs of African countries should, therefore, be supported decisively by the international community in the context of a new partnership for development. Although several important initiatives have already been taken by industrial countries and multilateral institutions, including the IMF and the World Bank, these need to be broadened and deepened to ensure that all countries share the opportunities and the benefits of globalization. The international community can make a vital contribution to African progress promoting steady, non-inflationary growth in the world economy and strengthening the international financial architecture. Thereby it will reduce the rise of major crises and destabilizing capital flows, actively supporting efforts to restore peace and security to the war-torn countries. It would also give the poor countries free access to industrial countries markets, especially for agricultural products, textiles and clothing. Providing deeper and faster debt relief to all eligible countries under the enhanced Heavily Indebted Poor Countries Initiative (HIPC); and increasing official development assistance in support of sound programs would substantially reduce poverty (Morris Szefted and Ray Bush, 1998:174-175, Calamitsis, 2001: 13).

V. The Role of International Financial Institutions

Although the role of development partner is very important each African country has to formulate its own development strategy with a comprehensive program of action that best suits its specific circumstances. To be more effective a country’s strategy will need to be based on an open, transparent and participatory approach that ensures broad national ownership of the desired goals. The direction
of policies and measures that is needed for African ownership of national development strategies should be emphasized. Africa should also start to criticize sharply the common donor practices of tying aid to purchase of goods or services from that particular country (Harsch, 1999: 122). This has been gaining ground in recent years under the impetus of a number of African Action Programs which have now merged into the New African Initiative. This initiative is firmly based on the principles of African ownership, leadership and commitment to the implementation of a strong domestic policies and reforms. But it has to be coupled with increased and better-coordinated international technical and financial assistance (Calamitsis, 2001: 12).

The efforts of the institutions that safeguard the international monetary and financial system to reduce the risks of globalization and improve the living standards of people should not also be undermined. Their objective is to achieve a sound and sustainable growth without major shocks and reduce poverty. Although the IMF and the World Bank have paid remarkably little or no attention to global inequality they must work to implement a participatory poverty reduction strategy to make globalization a process of integration and not of marginalization (Daouas, 2001:15; Wade, 2001:13). In providing finance, the IMF and the World Bank should provide more room to African countries to make their own choices to implement homegrown programs while focusing on measures that are critical for the success of the IMF or World Bank supported programs only.

International financial institutions can, therefore, help Africa to maximize the benefits of globalization and reduce poverty if they may take the following measures (G.E. Godwe, 2001: 33; Saleh M. Nusuli et al.; 2001:34-65):

Strengthen national economic stability and performance through their programs and policy advice.

Support regional organizations monitor economic performance of their member countries releasing information on individual country to compare country performance and stimulate peer pressure on weak performance.

Help to enhance regional policy coordination and institutional harmonization.

Provide technical assistance in tax harmonization and the establishment of regional banking commissions;

Assist to promote investment in the regions by facilitating the establishment of regional investment councils in strong performing areas of Africa that will provide for direct and regular contacts between potential investors from developed countries and high level government officials and entrepreneurs.

There is ample evidence that Africa’s external debt burden has been a severe obstacle to investment and renewed growth (Bangura, 2001: 41). The structural adjustment program have led many African countries into debt trap. With debt continuing to soak up a major portion of the least developed countries budget it created fiscal crisis. Moreover, huge external debt stocks have deterred investment and seriously undermined economic growth and employment (Lawrence Egulu, 2001/2:19). The Tanzanian Prime Minister, Frederick Tluway once explained: “… the high cost of debt servicing denies the degree of freedom to spend on the core issues for development. It denies us the opportunity
to spend on the social sector, on infrastructure…” (Harsch, 2001: 121). Robert Mugabe, the President of Zimbabwe had also commented: “Sustainable African development and the eradication of poverty needed, not charity, but a new creditable partnership giving urgent attention to debt relief” (Bush, 1998: 176).

The IMF sought to confront the issues of debt and poverty specifically through two channels. First, the Heavily Indebted Poor Countries Initiative (HIPCI) launched in 1996 aimed at reducing the external debt burdens of eligible countries to a sustainable level which are mostly in Africa. A total of about 34 billion dollars of debt relief has been committed to 23 countries under the HIPCI and of this 25 billion has been committed to 19 African countries (Bangura, 2001:37; Nsouli, 2001: 34-36). Second, the Poverty Reduction and Growth Facility (PRGF) enhanced in 1999 also focused on ensuring additional finance for social sector programs, primarily basic health care and education. The PRGF represented a commitment by the international community of the IMF in its poorest member countries. Moreover, with a focus on good governance the PRGF provides an important link between poverty reduction and the International Financial architecture. Of the IMF’s 77 low-income countries eligible for PRGE assistance, 40 are in Africa (Ibid). Consequently, efforts made to strengthen financial systems through rapid and comprehensive debt relief and poverty reduction will, therefore, benefit both Africa and the international community.

VI. The Role of African States

Redefining the role of African states is yet another important avenue to globalization. Until recently, in most African states, the scope of their activities had no defined limits. In addition to its sovereign functions which include security, justice, education and health care, the state in Africa had been involved in economic life through direct control over production and distribution of goods and services. In a number of countries the state is also responsible to manage financial institutions, controlling trade and capital flows between the national economy and the rest of the world. Interventionist system, which was justified in various ways limited private initiatives to marginal activities, preventing the emergence of true entrepreneurial class. It is from this restrictive and regulatory framework that African countries must extricate themselves if they are to realize their true potential in the global economy (Willett, 2001:5).

Although priorities vary from one country to the other, African countries should give particular attention to the following critical areas in order to remove impediments to investment and growth to reduce poverty and inequality.

1. Investment in training people and capacity building: According to the international development goals, it will be important to increase basic education programs to achieve universal primary education and eliminate gender disparities in access to education. Progress in education and training have to be broader and deeper to help Sub-Saharan African countries bridge the digital divide, take full advantage of the vast knowledge available on the internet, and improve their ability to compete in the world market (Ajayi, 2001:8, Daouuasd, 2001: 4-5).
2. **Improving infrastructure and increasing agricultural development:** Owing to the major deficiencies in infrastructure, most countries will require substantial new investment in roads, ports, clean water, power and telecommunication. Investment in transport for landlocked countries will enhance their economic integration with other countries. It will also be necessary to transform agricultural practices paying particular attention to Climate-Resilient Green Economy to resist the adverse effects of climate change and increase productivity for both food and export cash crops to achieve sustainable economic growth and poverty reduction.

3. **Fostering trade liberalization to encourage international transactions and exchange.**

4. **Increasing the role of private sector in the context of globalization:** In this context the private sector is the main engine of growth. As a result its operations must be free of cumbersome regulatory or bureaucratic procedures that could slow its expansion. Private investment will require a credible regulatory framework and an enhanced and efficient legal system that safeguards property rights, adequately enforces contracts and protects healthy competition.

5. **Promoting good governance in all its aspects:** This is probably the most crucial area of reform, as it would underpin and sustain the implementation of the entire country strategy for faster and more equitable growth. In most cases Africa’s hitherto record in this respect is so gloomy and even dark. Good governance should start from the top, with the political leadership free from corruption, setting the best example and clearly demonstrating a firm commitment to responsible policies and practices. Concurrently, this example should spread to branches of the administration, the judiciary and society at large to ensure that all forms of corruption are eliminated (Egulu, 2001/2: 22; Helliener, 2001:206; Mugrewaa, 2002:52).

African countries need to focus mainly on the following issues to promote good governance (Ajayi, 2001: 8; Egulu, 2001?2: 22; Michel Camdessus, 2001:365-366; Gondwe, 2001:35; Nsouli, 2001:35):

- the establishment of participatory democracy: the transparency of government: citizens must be kept informed on the decisions of the state and their justifications, so that grandiose plans such as Growth and Transformation can carry the people as well as care for the people;
- simplicity of procedures: whether in fiscal matters, investment, or other areas, administrative procedures need to be as simple as possible, with the number of participants reduced to a minimum; responsibility: public officials must be held accountable and, if necessary, penalized for offences; the elimination of corruption: even though its elimination in Africa will take time, even with strong and honest political leadership, eradication of corruption is imperative for promoting healthy competition and strengthening of efficiency of economic management; the granting of individual freedom and collective expression: a free and responsible press, in particular, is an important pillar of democracy; independence of legal system: the legal system must be free from pressure and intervention of political forces or any other organization, to ensure that its decisions are independent and impartial.

6. **Reducing the size of public sector:** The state should withdraw from the commercial sector and devote more time and resources to the delivery of essential public services. The tool for this is the privatization of inefficient public enterprises. The private sector is far better equipped than the
government to manage commercial activities and its ability to adopt to changes in the environment is greater (N’Diaye: 2001:19).

7. Increasing the role of Civil Society: Civil Society can also play a dual role in many African countries to help African growth. First, as a mouth piece for democracy, it is the chief challenge to the power of the state, limiting deviation from good governance and acting as a regulator in the political arena. Second, represented by consumer associations and non-governmental organizations, serves as a watchdog to reduce market excesses \( (\text{Ibid}) \).

The movement of people across national borders is also another avenue to globalization. Over the years and recently, many Africans have increasingly moved to Canada, France, the United Kingdom and the United States. The push factors from home include poor working environments, deteriorating infrastructure, political instability and conflicts. It is estimated that more than 30,000 Africans with doctoral degrees work in Western Europe and North America.

The advantages of emigration include workers’ remittance assuring their countries of origin a steady flow of foreign exchange and development of contacts that can lead to acquisition of better skills, experience and exposure to latest technologies. The African Diaspora can thus make an important contribution to the continent’s development (Ajayi, 2001: 7; OAU Report, 2001:3).

Regional integration is another stepping-stone for enhancing trade and investment, economic efficiency and equal participation in the global economy and growth; and it has been accorded high priority in Africa’s development strategy. According WTO, the question of globalization and regional economic cooperation particularly with the emerging economies have become the crucial issues of the present day international relations and integration process. In addition to globalization and multilateralism, regionalism is increasingly becoming one of the main factors in establishing the future world relations and achieving lasting peace, security and prosperity (Radoslav, Buljac, 1998:1).

If properly conceived promoting regional integration at home is an important intermediate step towards integration into the world economy, helping African countries overcome the challenges of globalization and other obstacles for development. For African countries which are individually handicapped by small markets, weak basic infrastructure and inefficient financial and human resources, regional integration can actually speed up globalization. Close trading links between African countries on the one hand and the emerging economies on the other could strengthen their capacity to participate in world trade. Africa should pursue regional integration with a view to help harmonize national policies and create larger markets with incentives for removing restrictive trade practices and licensing procedures, streamlining customs’ procedures and regulations, integrating financial markets, simplifying transfers and payment procedures, harmonizing tax treatments and encouraging free movement of goods, capital and people. (Ajayi, 2001: 6-7; Gondwe, 2001: 32; N’Diaye,. 2001:20; Shares, 2001: 16).

African countries could also benefit from the establishment of regional physical and financial infrastructures. A regional approach to key infrastructural areas- such as tariff reduction and harmonization, financial sector reorganization, investment incentive and tax system harmonization
and labour market reform enables participating countries to put their resources together to attain greater technical and administrative competence than they could do on their own. In addition, the establishment of shared energy, power, telecommunication and transportation systems is not only cost effective but also helps to bring countries closer together as they set common regional policies (Ibid.; OAU: 2001: 2-3). Therefore, efficiency is the first argument for the need of regional integration. When producers and countries specialize in goods that they can produce more cheaply, the whole region gains. Moreover, goods that cannot be obtained from domestic market can often be purchased from a larger regional market. Above all, regional integration can provide experience and the benefits of competition for general high cost products with less risk than in the wider world. Pursuing such regional approach will, in turn, allow countries to assert their interest in the international arena from stronger and more confident positions.

Regional integration in Africa has a long history and uneven implementation record. Numerous problems have continued to impede the progress of regional integration. The production structures of most African countries are the same and exportable products tend to be competitive rather than complementary. Inadequate transport and communication have partly contributed to the disjointed nature of African economies and restricted the movement of goods, persons and capital severely. In addition, the lack of currency convertibility, the continued existence of tariff and non-tariff barriers, a fear of losing out to more developed member states of regional groupings, and differences among political leaders have remained obstacles to closer integration throughout the continent (Mohammed Mwamadzingo, 2001/2: 10).

Moreover, the problem to regional trade arrangements and further integration in Africa is the existence of a number of different overlapping and internally inconsistent regional arrangements and initiatives – especially acute in Eastern and Southern Africa. The various regional groupings such as the Common Markets for Eastern and Southern Africa (COMESA), the South African Customs Union (SACU), and the South African Development Community (SADC) – have overlapping memberships, conflicting obligations, different strategies and objectives, conflicting rules and administrative procedures. The complexity of Africa’s trade polices and arrangements, therefore, reduces the potential trading gains from regionalism and undermines the improvement in the investment climate that arises from larger markets, and improved transparency (Gondwe, 2001:33; Nieuwkerk, 2001:11; Sharer, 2001:16-17). The real challenge is also to ensure that the regional organizations are perceived as effective means of integrating Africa into the world economy, fostering mutual support among members in their reform efforts. In order to become true vehicles for global integration, regional organizations should strongly push for openness to the rest of the world.

VII. Essential Factors for Integration.

Factors that are necessary for Africa to achieve integration include: first, there must be a real political will to pursue regional integration objectives and to give the priority over domestic consideration; second, a resolute effort must be made to rationalize existing arrangements; third, efforts are needed to coordinate economic policies by reinforcing peer-group surveillance of national economic policies, and to work more intensively to harmonize standards and regulations (Gondwe, 2001:33; N’Diaye,
2001: 20); fourth, criteria for entry into African integration should not be so high and burdensome by political problems, the selection criteria should be more rational and balanced without excluding anybody or creating any kind of privileged group. African countries, without exception, must have a better understanding about today’s world profound changes and mastery of the ongoing information revolution.

African regional organizations must be viewed and established as instruments that can facilitate the gradual integration of African countries’ economy with the world economy by providing African products access to the regional market. They must neither limit themselves to protesting nor become protectionist fortresses against globalization (Oman, 1994:29). Regionalization takes a variety of institutional forms. These ranges from a free or preferential trade agreements, in which participants do not have a common external trade policy, or a customs union, in which they do, to deepen forms of integration such as tying of currencies, the harmonization of some domestic policies, and natural recognition of standards and regulations. In the extreme it can even involve full economic, monetary and political union. These institutional arrangements have in common the exercise of the state to lower barriers, especially policy barriers, to inter-regional economic activities (Ibid., 6-7).

Many countries in Africa, as is the case in other parts of the world, are taking greater interest in regional economic integration and have developed programmes for the promotion of this cause (Mwamadzingo, 2001/2: 11; Bulajic, 1998: 1; OAU Report, 2001:P 11-12; Francois Misser, 2001/2: 23), and there are now some encouraging steps and progresses towards regional integration with the new African initiative adopted by African heads of states. The West African Economic Monetary Union (WAEMU) has also made considerable progress, in recent years, in establishing a free trade area to reinforce its common currency. The rates and numbers of external tariffs have been removed by WAEMU (Bulajic, 2001:1; Gondwe, 2001; N’Diaye, 2001: 20).

Even though the situation in Eastern and Southern Africa is more challenging, given that there was no history of a common currency on which to build, efforts are underway to establish separate free trade in Southern African Development Community and the Common Market for Eastern and Southern Africa by establishing a task force to improve cooperation between the two groups (Gondwe, 2001: 33; OAU Report, 2001: 11). This was a result of the establishment of the Regional Integration Facilitation Forum (RIFF) in 2000, aimed at trade and investment promotion (OAU Report, 2001: 7-8).

After centuries of division, African countries now seem ready to compete rather than confront, to cooperate rather than clash or dominate. There is no alternative for African countries but to improve and strengthen their bilateral and regional cooperation and become part of the overall African integration process (Ibid.,11-12). Apparently, this is the best way for African countries to overcome the complex transition hardship. They must engage in tougher competition aim at higher technological and information standards. African countries must organize themselves regionally to respond jointly, relying on their own resources and upholding their own interests in the changed institutional relations. Implementation of this policy, in full and in good faith, is the best way for African countries to overcome the inherited mistrust and occasional irrational behavior, to create a climate of better
understanding, good neighbor relations, confidence and stability, to facilitate political and social reforms and strengthen regional integration.

Concluding Remarks

Handicapped by the weakness of its infrastructure, lack of qualified human resources and low level of industrial development, Africa is clearly not sufficiently integrated into the global economy. It is also clear that the continent cannot afford to remain on the sidelines of globalization much longer. To facilitate its inclusion into the world economy, Africa must begin to make significant institutional reforms- in particular refocusing the functions of the state towards its essential mission of delivering needed public services, within liberalized, democratic and transparent framework. It must strengthen the rule of law and the role of the civil society, which are critical for many social and economic changes. Regional economic integration is also a necessary element for securing Africa’s active participation in the global world economy.

All the reforms necessary for African transformation will incur extremely high financial and social cost that by far exceeds the continent’s current resources. Africa should, therefore, count on international cooperation to support its economic development efforts and effectively manage its own resources. Particular attention must also be paid to manage, the external debt that weights heavily on public finance. The various debt reductions undertaken by the international financial community are very encouraging and should be explored more intensively.

Africa has an enormous need for new financial resources to encourage investment, and it is hoped that Africa’s partners can help orient more direct foreign investment to the continent. Financial aid from international agencies tends to be subject to numerous conditions and payment procedures of debt are often unwieldy. Flexibility in the delivery of aid and financing might help speed up African economic growth.

Finally, Africa must be able to institutionalize good governance and stamp out corruptions to count on the technical and development assistance of its external partners to strengthen its human resource capabilities. In this regard, particular attention should be paid to training in the use of new information and communication technologies, in order to minimize the risks and the challenges to benefit fully from globalization.

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Is it a Lose-win Situation? From Haramaya to Zwai via Hora-Kilole to Add Value to Livelihoods and Biodiversity Conservation in Ethiopian Wetlands

By

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Abstract

Haramaya and Hora-Kilole wetlands have been monitored for 20 years (1986-2006) for purposes of resource conservation and sustainable use. In Haramaya, both the local population and government agencies (Haramaya and Harar municipalities, Haramaya University, etc.) collected water from this wetland directly or indirectly by digging boreholes and used it as a terminal recipient of household wastes. This has eventually led to the deterioration of the water quality and eventual complete loss of the wetland biodiversity by 2006. In Hora-Kilole, the local population had never impacted this wetland until 1988, because of its high salinity that made the water unfit for human consumption, irrigation or animal watering. In 1989, the Ministry of Agriculture constructed a weir dam across an adjacent river to harvest water in Hora-Kilole for irrigation, but ended up in complete transformation of the biodiversity from saline-alkaline (Spirulina and flamingos) to freshwater (Peridinium, fishes and cormorants) community due to the dilution effects of the inflow, and eventually ending up with no irrigation scheme. On the other hand, Zwai (a severely threatened wetland in the Ethiopian Rift Valley) supports livelihoods of the people in the watershed and also hydrologically ensures the continuity of biodiversity in Lakes Langano, Abijata and Shala. With experiences from Haramaya and Kilole, interdisciplinary research with stakeholders’ involvement is underway in Zwai and its watershed to develop models for sustainable biodiversity conservation and improvement of livelihoods. The developments and challenges in Zwai are discussed based on measures taken in recent years.

Key words: Haramaya (Alemaya), Hora-Kilole, Zwai (Ziway), Ethiopia, tropical lakes, biodiversity conservation, livelihoods, wetlands

Introduction

Lake Haramaya (known in the literature as Alemaya) is located in the Southeastern Ethiopian Plateau about 525 km away from Addis Ababa and Lake Hora-Kilole (also known as Kilole or Kilotes) is found in Central Ethiopia, southwards about 62 km from the same city. These two lakes were subject of numerous studies in the past. The origins and limnological features of these two lakes were different, although they are presented here in a contrasting scenario.

Lake Haramaya is more of a catchment lake for an area of slightly more than 200 km² watershed (Shibru Tedla and Feseha Haile-Meskel 1981, Brook Lemma 1987, 1991). There were no streams or rivers that were flowing in or out of this lake, except the seasonal run off. An adjacent and northerly-located Lake Tinike (Kurro) overflows into Haramaya during the rainy seasons, as it is located on a
slightly higher ground (Fig. 2). The watershed of this lake is devoid of apparently all its natural vegetation and is highly populated, with the majority of the land being used for horticultural crops and a stimulant plant locally known as "khat" (*Catha edulis*) for export to neighboring Djibuti and Somali. Farmers in the watershed needed water for irrigation for about eight dry months of the year. Besides, the lake water was also pumped for municipal uses to a town by the same name of about 30 000 people and the nearby town of Harar, 20 km in the eastern direction with a population of about 150 000. The latter town is outside of the lake watershed, posing additional water budget deficit on the lake. Eventually the demand from Harar, the increasing water supply demand of the growing population in the watershed and climatic changes have led to extensive water budget deficit on the lake creating the scenario described below (see also Brook Lemma 1994a and b, 1995, 2002 and 2003).

Lake Hora-Kilole was a saline-alkaline lake known in the literature for its high salinity, proliferation of more or less a monoculture of *Arthrospira fusiformis* (*syn. Spirulina platensis*) and flocks of spoonbills and lesser flamingos (*Omer-Cooper 1930, Prosser, et al. 1968, Talling, et al. 1973, Wood, et al. 1976, Melack, 1981, Elizabeth Kebede, et al. 1986, Wood, et al. 1988, Green and Seyoum Mengistu 1991*). Its water has never been used for human direct use, be it for irrigation or drinking water supply owing to its high salinity. However, its scientific value for studying salinity series and the consequent variations in ecological range of lakes made it an index of research, particularly in the study of African saline lakes along with Lakes Hora-Hado (Arenguade), Abijata (Abiata), Nakuru, Bogoria, Sonachi and many others. Since 1989, the Ministry of Agriculture envisaged using this lake as a reservoir by diverting an adjacently flowing River Mojo to collect or harvest water to irrigate the plains located south and westward from the lake (*Brook Lemma 1994, 1995, 2002, 2003a and b, and Zinabu Gebre-Mariam 1994*). This diluted the water so much that all the life assemblages of the lake changed, bringing Lake Hora-Kilole to an ordinary freshwater system containing wide spectrum of algae, zooplankton and more than three different types of fish species which were not there before.

What these lakes have in common to deserve a parallel investigation is the impacts of population increase they were subject to without any consideration of the consequences that could follow and climate change. What is interesting and what should be kept in mind while going through this paper is that the impact man made on Lake Haramaya was excessive water withdrawal, while on Lake Hora-Kilole it was water addition in so short a time bringing about contrasting scenarios on these two lakes.

This long-term investigation was set out as a follow up of the various changes that occurred over the years as seen from limnological parameters, the consequent anthropogenic impacts on Lakes Haramaya and Hora-Kilole, and the lessons that could be learned from the changes that occurred in these lakes. They were later reflected on the current scenarios seen on Lake Zwai and the associated lakes in the Zwai-Shala Basin (Fig.1).

Lake Haramaya is located in the southeastern Ethiopian Plateau margin bordering the Southern Afar, at 2000 m above sea-level, between 42°02'E and 9°25'N (Fig. 2). Lake Hora-Kilole is found in the Central Ethiopian Plateau at 1920 m above sea level, 39°5'E and 8°48'N (Fig. 3). The locations of these lakes at similar altitudes and their exposure to similar climatic changes in the tropics make them quite comparable for study.
Lake Haramaya: For over 20 years L. Haramaya has been observed to shrink continuously. Some of the evidences in terms of morphometric and physico-chemical changes are shown in Fig. 2 and Table 1. By 2004, the lake has altogether disappeared and turned into an ephemeral lake where some water percolates at the lowest spot of the original lake basin.

Human demographic and climatic changes have contributed to the transformation of L. Haramaya to an ephemeral lake. The increase in population in Harar town and in the lake watershed demanded high municipal water supply over the years that has never considered any water budget scheme. The farmers in the watershed were pumping water out of the lake twenty-four hours a day (Table 1).

Fig. 1: The Zwai-Shala Basin with the associated feeder rivers (Image partly taken from Vuik 2008).

This was mainly to irrigate a commercial crop locally known as "khat" or scientifically, *Catha edulis*. Succulent leaves of this plant are chewed and the water extract swallowed as stimulant with the belief that it stimulates the brain to work harder, faster and longer. It is also exported to neighboring countries like Djibouti and Somalia. Farmers obtain quite satisfactory incomes as observed from the rate of conversion of food crop fields into "khat" fields.
Fig. 2: Lake Haramaya: depth profile and surface area changes. The inset on the map of Ethiopia shows location of Lake Haramaya.

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>2000 m asl</td>
<td>2000 m asl</td>
<td>2000 m asl</td>
</tr>
<tr>
<td>Surface area</td>
<td>4.72 km²</td>
<td>2.17 km²</td>
<td>Total transformation from an aquatic to a terrestrial environment</td>
</tr>
<tr>
<td>Maximum depth</td>
<td>7.0 m</td>
<td>3.5 m</td>
<td></td>
</tr>
<tr>
<td>Mean depth</td>
<td>3.13 m</td>
<td>1.33 m</td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>0.15 km³</td>
<td>0.005 km³</td>
<td></td>
</tr>
<tr>
<td>Secchi depth</td>
<td>0.98 - 1.81 m</td>
<td>0.8 - 0.9 m</td>
<td></td>
</tr>
<tr>
<td>Water temperature</td>
<td>19.2 - 23.8 °C</td>
<td>19.0 - 24.0 °C</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>7.4 - 8.8</td>
<td>8.0 - 9.2</td>
<td></td>
</tr>
<tr>
<td>Dissolved oxygen</td>
<td>3.0 - 5.0 mgO₂L⁻¹</td>
<td>6.0 - 10.0 mgO₂L⁻¹</td>
<td></td>
</tr>
<tr>
<td>Conductivity</td>
<td>960 - 1180 mScm⁻¹</td>
<td>990 - 1200 mScm⁻¹</td>
<td></td>
</tr>
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</table>

There is a marked increase of about 3° C in the air temperature of the region between 1960 and 2006 (Fig. 3). The rainfall pattern over the years has not changed much except that it is highly erratic. However, when rainfall of the region is viewed in comparison with the increase in air temperature and the change in human demography, it is obvious that the lake was operating at water budget deficit.
At the same time the household wastes dumped in the watershed including fecal wastes and all that comes from Haramaya town are washed into the lake with floods from torrential rains (Fig. 5). These have greatly influenced the plankton community in favor of those species, particularly *Peridinium* spp., that proliferate on such organic food sources (Nakamoto 1975, Brook Lemma 1994) (Fig. 17). The zooplankton communities have gone in the direction of small cladocerans, copepods and mostly rotifers that are small-bodied, such as, *Brachionus* spp., *Filinia* spp. and *Lecane* spp. (Fig. 5).

As observed in many tropical lakes, these trends are sufficient indicators of lake water quality deterioration and progressive loss of the assimilative power of lakes of the organic and other wastes that come in by wind, runoff or direct dumping of wastes into the lake (Nakamoto 1975, Brook Lemma 1994).
Fig. 4: Relations in phytoplankton biomass, Lake Haramaya, 1986 - 1999. C stands for *Cosmarium* sp. P for *Peridinium* sp., N for *Navicula* sp., M for *Merismopedia* sp.

<table>
<thead>
<tr>
<th>Station</th>
<th>1986</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C 56%</td>
<td>C 35%</td>
</tr>
<tr>
<td>Station II</td>
<td>R 7%</td>
<td>C 12%</td>
</tr>
<tr>
<td></td>
<td>Ro 14%</td>
<td>Ro 14%</td>
</tr>
<tr>
<td></td>
<td>Co 31%</td>
<td>Co 69%</td>
</tr>
<tr>
<td></td>
<td>Cl 15%</td>
<td>Cl 15%</td>
</tr>
</tbody>
</table>

Fig. 5: Relations in zooplankton biomass, Lake Haramaya, 1986-1999. Ro stands for Rotifera, Co for Copepoda and Cl for Cladocera.

By conducting some fishing and by regularly observing the fish landings made by fishermen, it was found out that *Oreochromis niloticus* (Nile-tilapia) or locally known as *Koroso* and *Clarias gariepinus* (the African catfish or locally known as *ambazza*) thrived in L. Haramaya. The gear the fishermen used (mostly beach seines) had no standard mesh sizes and all the nets observed were locally made without any consideration of their effect on fish populations. As a result the fishes caught were small in size much below the expected table-size and were operated from the shores, damaging brooding female and young fish populations. As the operation of water collectors, municipalities and irrigation schemes continued unabated, the lake size continued to decrease, fishermen had to follow the retreating water edge and the water below their boat continued to disappear (Fig. 6).

Fig. 6: Lake Haramaya: Gradual drying up by 2000. Today it has completely disappeared with grasses gradually covering the sediments.
Lake Hora-Kilole: On the contrary, the addition of water into L. Hora-Kilole has resulted in increasing the lake volume tremendously, despite an increase of about 5°C air temperature between 1965 and 2006 (Figs. 7 and 8 and Table 2). The volume of the lake is not much affected by irrigation, as there was not much such activity. Most of the agricultural practices were focused on food crops that mainly depended on seasonal rains (Fig. 8). However, this anthropogenic effect has turned L. Hora-Kilole from a highly saline-alkaline hypertrophic lake into a highly diluted typical oligotrophic tropical freshwater system. The Phytoplankton community, which was almost exclusively dominated by *Arthrospira fusiformis*, the zooplankton community which was dominated by *Paradiaptomus africanus* (Syn. *Lovenula africana*) and the flamingoes and spoonbills that thrived on these species of plankton completely disappeared as the essential preconditions of saline-alkaline nature of the lake was altered by the inflow from River Mojo. In place of *A. fusiformis* the lake became full of *Peridinium* sp., which thrived on organic matter entering the lake with the river water and runoff (Nakamoto 1975, Brook Lemma 1994) (Fig. 9 and Table 2). The zooplankton community was replaced by *Daphnia barbata*, *Ceriodaphnia reticulata*, *Moina micrura dubia*, *Thermocyclops decipiens*, *Mesocyclops aequatorialis similis*, *Filinia* spp., *Brachionus* spp., *Leydigia acanthocercides*, *Keratella* spp., *Asplanchna* sp. and *Lecane (Monostyla) bulla* (Fig. 9).

Along with the river water came into the lake at least four species of fish, namely, *Oreochromis niloticus* and three other *Barbus* spp. These phenomena brought the two lakes in close contrast, although the first, L. Haramaya, has now disappeared while the second, L. Hora-Kilole, turned into a typical tropical freshwater system (Figs. 10 and 11). Today the decrease in salinity has allowed the surrounding community to use the water for household use, animal watering, practice some fishing for sale in the closely located town of Bishoftu and practice small scale irrigated horticultural farming.
Table 2: Changes in Lake Hora-Kilole by 1989 and 2006

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>1920 m asl</td>
<td>1920 m asl</td>
<td>1920 m asl</td>
</tr>
<tr>
<td>Surface area</td>
<td>0.77 km²</td>
<td>1.18 km²</td>
<td>~ 0.77 km²</td>
</tr>
<tr>
<td>Maximum depth</td>
<td>6.4 m</td>
<td>29.0 m</td>
<td>6.0 m</td>
</tr>
<tr>
<td>Mean depth</td>
<td>2.6 m</td>
<td>1.69 m</td>
<td>2.6 m</td>
</tr>
<tr>
<td>Volume</td>
<td>0.002 km³</td>
<td>0.023 km³</td>
<td>0.002 km³</td>
</tr>
<tr>
<td>Secchi depth</td>
<td>0.15 m</td>
<td>0.37 – 1.80 m</td>
<td>0.79 m</td>
</tr>
<tr>
<td>Water temperature</td>
<td>19.0 – 23.0 °C</td>
<td>19.3 – 24.0 °C</td>
<td>23.0 °C (surface)</td>
</tr>
<tr>
<td>pH</td>
<td>9.6</td>
<td>7.4 – 9.2</td>
<td>8.98</td>
</tr>
<tr>
<td>Dissolved oxygen</td>
<td>1.0 – 6.0 mgO₂L⁻¹</td>
<td>3.4 – 10.6 mgO₂L⁻¹</td>
<td>9.7 mgO₂L⁻¹ (surface)</td>
</tr>
<tr>
<td>Conductivity</td>
<td>5930 μScm⁻¹</td>
<td>339 μScm⁻¹</td>
<td>370 mScm⁻¹</td>
</tr>
</tbody>
</table>

Fig. 8: Meteorology of Lake Hora-Kilole area, 1965 - 2006.
Fig. 9: Changes in zooplankton and phytoplankton biomass, Lake Hora-Kilole, 1990-1999. Ro stands for Rotifera, Co for Copepoda, Cl for Cladocera, C for Cosmarium, N for Nitzschia sp. S - Staurastrum sp., P for Peridinium sp.

Fig. 10: Lake Hora-Kilole after 1989 as water from River Mojo enters lake through the diversion canal. Left: as seen from the canal and right: as seen from lake water surface or from boat.

Fig. 11: Lake Hora-Kilole at its highest water level during the "big" rains (July, August and September) between 1989 and 2000.

At Lake Hora-Kilole, between 2000 and 2003 about 0.002 km$^3$ (2 x 10$^6$ m$^3$) water was lost and the lake has almost returned to its original surface area and maximum depth (Fig. 16 and Table 2). This change has not yet resulted in any appreciable chemical and biological changes. The salinity has remained low, the phytoplankton and zooplankton are still dominated by Peridinium spp. and Daphnia barbata, respectively, and the fish community continues to thrive allowing the fishing practice to continue. Then the troubling question was "Where has all this water gone in such a short time?" At this stage of the study it was imperative that the hydrology of the lake should be revisited. As a consequence the search for the reasons had to put into perspective the storage of 2 x 10$^6$ m$^3$ of additional water by diverting River Mojo and that this water cannot be lost by evaporation alone in such a short time between 2000 and 2003. So, there should be another explanation for this unusual scenario at L. Hora-Kilole.
Looking back into the studies of Mohr (1961), Prosser et al. (1968), Darling et al. (1996), Seifu Kebede (1999), Seifu Kebede et al. (2001), Lamb (2001) and Tenalem ayenew (2004), it was evident that lakes are not separate hydrologic entities, but interlinked by surface and ground water, particularly those that are found in the same watershed. With regard to the case of Bishoftu Crater Lakes, it was found out that groundwater is the major supply of water in the Bishoftu crater lakes (Seifu, et al. 2001, Lamb 2001). This suggested that Lake Hora-Kilole which could only sustain water volume of about 0.002 km$^3$ throughout its evolutionary history given its geologic formation and the regional climatic conditions. Over the years between 1989 and 2003, the lake was faced with the addition of $2 \times 10^6$ m$^3$ of water which must have very likely exerted an unnatural mass on the basement rock creating a continuous and enormous pressure on groundwater flow rate.

Fig. 12: Locations of the Bishoftu Crater lakes: L1 - Hora-Arsedi, L2 - Bishoftu, L3 - Hora-Hado, L4 - Bishoftu-Guda, L5 - Hora-Kilole, L6 - Kuriftu and L7 - Cheleleka (swamp). The broken lines indicate the direction of underground water flow in favor of the terminal lake, Hora-Arsedi. The inset in the map of Ethiopia represents the enlarged part (Map from the Ethiopian Mapping Agency, 1975).

The next question was to study the locations the lakes occupy in the region and the topographic position of the crater lakes with respect to each other. From Fig. 11, one can learn that the lakes are
arranged along transects AB, CD and EF. The topographic map shows that the locations occupied by L. Hora-Hado and L. Hora-Kilole are elevated up to 2,200 m asl. These two points close down in the direction of L. Hora-Arsedi to an elevation of 1860 m asl. From the surface topography one can see that the latter lake surrounded by Bishoftu town lies at the base of a valley which extends in north-south direction and along which the Addis Ababa - Adama (Nazareth) highway is constructed. Further study in the topographic positions of the Bishoftu Crater Lakes (Figs. 12, 13 and 14) has revealed that Lake Hora-Arsedi is found at the lowest position of all the crater lakes.

Fig. 13: Cross-section drawn along Line AB in Fig. 11 to show the topographic position of the Bishoftu Lakes: Lakes Hora-Hado, Bishoftu, Hora-Arsedi and Bishoftu-Guda. The broken arrows indicate the direction of groundwater flow.

Fig. 14: Cross-section drawn along Line CD in Fig. 11 to show the topographic position of the Bishoftu Lakes Lakes Hora-Arsedi and Kilole. The broken arrow indicates the direction of groundwater flow.

This coincided with the study made by Seifu Kebede (1999), Seifu Kebede et al. (2001) who have used tracer isotopes to follow the pattern of groundwater in and outflow of the Bishoftu lakes. The studies clearly indicated that Lake Hora-Arsedi is the terminal lake of the region that receives groundwater inflows from the surrounding lakes. It was also an exciting phenomenon to notice the sudden increase in the volume of Lake Hora-Arsedi whose water column rose by more than two
ometers between 2000 and 2003. Apparently, most of the harvested water from L. Hora-Kilole percolated as underground inflow into L. Hora-Arsedi, either directly (Transect CD in Figs. 12 and 13) or via L. Bishoftu-Guda (Transect EF in Figs. 12 and 14). In other words, as the water harvesting continued at L. Hora-Kilole, the basement rock on which it lies could not any more bear this unnatural mass (the weight of the additional \( 2 \times 10^6 \) m\(^3\) of water) and hence the basement rock eventually gave way to a sudden increase in the underground water flow rate. Currently, the footpath constructed by the late Emperor Haile Selassie along the water's edge of L. Hora-Arsedi and along which tourists had enjoyed hitchhiking has been submerged at most parts of the shore after 2003. The water chemistry and biological diversity of the Bishoftu Crater Lakes has become similar, as revealed in the studies done by Seifu Kebede (1999), Brook Lemma (2001, 2002, 2003a) and Zinabu GebreMariam (1994, 1998).

**Discussion**

Lakes Haramaya and Hora-Kilole have been exposed to contrasting human interventions, where in the first scenario man has removed water beyond the water budget of the lake could allow (Table 3).

<table>
<thead>
<tr>
<th>Water budget and loss per year</th>
<th>Amount in m(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total water budget per year (rainfall on lake and surface runoff from the surrounding catchments)</td>
<td>8,727,194</td>
</tr>
<tr>
<td>Evaporation loss per year</td>
<td>3,956,878</td>
</tr>
<tr>
<td>Abstractions</td>
<td></td>
</tr>
<tr>
<td>For domestic water supply to towns of Harar, Haramaya town, Awadai, Haramaya University and others</td>
<td>2,356,878</td>
</tr>
<tr>
<td>For irrigation by the local farmers (C. edulis and vegetables)</td>
<td>3,028,754</td>
</tr>
<tr>
<td>Total abstractions per year</td>
<td>5,385,632</td>
</tr>
<tr>
<td>Total water loss per year (evaporation PLUS abstraction)</td>
<td>9,342,510</td>
</tr>
<tr>
<td>Water balance per year (total water budget MINUS total water loss)</td>
<td>-615,316</td>
</tr>
</tbody>
</table>

As a consequence the lake continued to decrease in volume with all the household waste of Haramaya town and the community in the watershed coming into it (Fig. 17). Eventually, however much undesirable, the inevitable happened and the lake has now totally disappeared and transformed into a terrestrial environment (Fig. 6). The space that was once covered by water is now taken up by a few species of less competent grasses, which will eventually and inevitably be replaced by more competent, diversified and perennial land plants. The ephemeral lake that is now seen during the “big” rains (July, August and September) does not match any of the purposes the human needs of the watershed and Harar Town require. What remains now is the human water requirement load that needs immediate response to let continue business-as-usual kind of life for the community in and outside L. Haramaya watershed. This demand has lead people of the region to tap underground water
where the lake was lying. Currently there are around twelve large waterholes with water pumps that throw large volumes of water twenty-four hours a day to all the sectors that were using Lake Haramaya, including to some of the "Khat" farmers. In recent years people have to dig much deeper into the ground to get only a small percentage of the water supply they used to collect at ease and at a higher cost as compared with the past. Furthermore, conflicts on groundwater use have started to crop up between major groundwater users such as Harar Municipality, Haramaya University, Haramaya, Hamaressa and Aweday Towns. The latter two towns are located between Haramaya (the water source point) and Harar, the terminal water recipient town.

Review of the satellite images of Lake Haramaya watershed captured in the past also corroborates the unlimited water use for purposes of Khat plantations, those green areas in the satellite images referred to as bush lands turned out to be Khat farms at ground surveys (Fig. XX). The extreme desire of people in the watershed and beyond in the direction of Harar town to improve their livelihoods by generating quick and bushes into Khat farms that were irrigated, harvested and turned into immediate cash. The obvious inverse relation of the expansion of this water-thirsty plant and the diminishing of surface water is clearly seen in the following two images (Figs. 15 and 16).

Fig. 15: Satellite images of Lake Haramaya watershed where the green area, Chat farmlands, have increased over the years at the expense of loss of the brown farmlands and surface waters such as Lakes Haramaya and the wetland north of it known as Tinikie or Kurro (Image from Lake Haramaya Rehabilitation Team of Haramaya University, 2012).
Fig. 16: The inverse relations of the expansion of Chat farmlands (*Catha edulis*) and loss of surface waters such as Lake Haramamya and Tinikie or Kurro Wetlands (Figure derived by estimations of surface areas from the satellite images given in Fig. 15).

Lake Hora-Kilole faces complete alteration of its life assemblages and water chemistry. The high salinity condition before the dilution was the basis for the proliferation of *Arthrospira fusiformis* (Table 2, see conductivity before 1988).

This particular phytoplankton species has disappeared before it could be exploited as a rich source of rare amino acids for making chocolates and in recent years used for sustaining HIV/AIDS patients. The *Spirulina* culture industry is now a worldwide business, which Ethiopia could have joined by harvesting *Arthrospira fusiformis* without any addition of fertilizers and simulation of the right environmental conditions, as all these were naturally available. It is also unfortunate that Ethiopia lost the revenue it could have obtained from tourists who could have visited thousands of flamingos and spoonbills at such a short distance that could have been done over a weekend from Addis Ababa.

When Lake Hora-Kilole is seen from the scientific perspective, the importance of this lake as an reference research material for scientific investigations on saline-alkaline lakes around the world has slipped away with the addition of water from River Mojo (Fig. 10 and 11).
Incidentally it may be worth mentioning that a similar resource is being lost at Lake Abijata (Abiata) because of excessive water abstraction to produce soda ash and by diverting its inflows such as River Bulbulla for irrigation purposes (Figs. 1 and 20).

Fig. 18: Lake Hora-Kilole before 1989, the diversion of River Mojo, flowing adjacent the lake at the upper edge of the image (from Google Map).

The major lessons that could be learned from these two contrasting water use scenarios are (i) Climatic change remains a threat with the occurrence of increasing warming and recurrent droughts. This inevitably exerts a lot of pressure on fresh waters as observed in Lake Haramaya condition. (ii) Increasing human needs for fresh water with unplanned population growth in the tropics remain a threat to environmental degradation and misuse of freshwater systems. (iii) Planning and budgeting water use in relation to the water input budget of the respective aquatic system should be high on the agenda of tropical water use managers. (iv) Segregation of wastes into their respective types (metals, plastics, organic matters, etc.) and treatment of household and other wastes to environmentally friendly forms before putting them into aquatic systems should be most urgent instead of struggling for treatment of people who comedown with waterborne diseases. Prevention of diseases and protection of environment are much cheaper and easier processes than risking the productive age of citizens to diseases and death. (v) Exploitation of natural resources should be approached with the objectives of rational use for the sake of conservation, healthy and sustainable use of resources.

The final question that may still remain would be what will be the fates of Lakes Hora-Arsedi and L. Hora-Kilole? This may depend on two conditions. Scenario one would be if the inflow from R. Mojo is completely stopped from entering into L. Hora-Kilole, L. Hora-Arsedi will be receiving groundwater inflow as it used to receive it before 2000 and hence it would return to its original water level and water chemistry within a number of years. In such a case L. Hora-Kilole may continue to concentrate its water, mainly through evapo-transpiration and seepage, and very likely someday reverting to its original saline-alkaline and hypertrophic status. Scenario two would be if R. Mojo continues to flow into L. Hora-Kilole. In this case L. Hora-Arsedi will continue to receive
groundwater inflow more than it used to experience before 2000. However, this inflow will not have the capacity of raising the volume as that large volume of inflow that took place between 2000 and 2003. The inflow rate would stabilize to an annual constant level, the lake would subside to a certain lower level than at present but not as low as the level it had before 2000.

Lake Zwai located in the Ethiopian Rift Valley (also referred to as Ziway, Zeway or Zwei in the literature) is a freshwater wetland found at a distance of about 163 km south of Addis Ababa. It lies in the southern end of the Oromia Region (Fig. 1). The woredas (a native word for district) that share the shoreline of the lake are Adami Tulu, Jido Kombolcha, Dugada Bora, and ZwaiDugda. The town of Zwai lies on the lake’s western shore, extending along that shoreline and growing at a very fast rate in recent years. Besides seasonal runoffs and groundwater movement favoring the lake, it is also fed by two rivers, namely, the Meki from the west and the Qatar from the east, and is drained by River Bulbula which feeds Lake Abijata to the south. The catchment of this lake has an area of 7025 km² (Mepham, et al. 1992) and the lake lies at an altitude of 1,635 meters above sea-level (asl) (Fig. 1).

Lake Zwai is 31 km long and 20 km wide, with a surface area of 440 km². It has a maximum depth of 9 meters (Sileshi Bekele Awulachew, et al. 2007 and NMSA 2009). It has five islands which include DebreSina, Galila, Birds’ Island and Tulu Gudo. On the latter island, there is a monastery very recently renovated which is believed to have housed the Ark of the Covenant around the ninth century during its flight from the Lake Tana islands (Blundell 1906 and Hancock 1992). Blundell (1906) described Lake Zwai rising some 80 feet (24.4 m) above the present level, 50 miles across (80 km) with its northern shores covered by papyrus.

In view of the research on Lakes Haramaya and Hora-Kilole, it is important to keep looking out for the next wetlands that appear to be vulnerable to human, climate and incompatibility of management policies. This is not very hard in developing countries where human livelihoods are directly interwoven with wetland resources. Readers who are very much familiar with Ethiopian wetlands can very easily consider the precarious situations in biodiversity conservation in the Awash River system, around Lakes Hawassa, Langano, Tana, Abijata, Zwai and many others. As a result, the next search for biodiversity conservation came to Lake Zwai and the watershed in which at least three major lakes and a few number of rivers are interrelated. It is therefore important and timely to closely study the Zwai-Shala Basin for at least four major reasons.

Firstly, in terms of biodiversity, Lake Zwai is a special wetland in which diverse plant and animal lives ranging from microscopic to the large mammals such as hippopotamus strive. Among diverse fish species that thrive in Lake Zwai, Barbus ethiopicus is an endemic species, which one can only find in Lake Zwai only (Fig. 19). The aquatic vegetation along the shores and the woody vegetation on the islands remind observers the nostalgic land-cover that used to blanket the whole basin. Today, it is a rare event to see B. ethiopicus in fishermen’s nets, like the trees and game animals that have very slowly disappeared from the watershed. The fate of hippopotamus in Lake Zwai seems to face the same problems with increasing global warming, population and their requirement for freshwater for various development efforts increase.
Fig. 19: The fish diversity observed at Lake Zwai with *Barbus ethiopicus*, which people can only see here and not in any part of the world.

Secondly, L. Zwai being located at a slightly higher altitude, it supplies water by surface (River Bulbula) and underground to the surrounding wetlands of Langano, Abijata and the majestic Lake Shala that are found at lower altitude (Fig. 20).

Fig. 20 above indicates that surface and ground water movements flow favor the water bodies found at lower altitudes. Any sort of impact be it global warming, loss of rainfall, water abstraction by
humans or even pollution by excessive pesticides/herbicides, nutrients use, or release of heavy metals can obviously ooze into the downstream wetlands and lakes. Any impact of conserving and wise use of Lake Zwai can be reflected on the other lakes in the basin. Recent changes in water level fluctuations at Lake Zwai due to reduction in seasonal rainfall had resulted in water volume reduction in Lakes Abijata and Shala.

Thirdly, apparently the livelihoods of the people of the watershed of Lake Zwai are dependant directly or indirectly on the presence of this wetland and the rivers that enter or leave it (Fig. 21). Water abstraction for irrigation, city supply and household uses are the most apparent practices. Fishery, use of aquatic vegetation and even collecting firewood and construction materials from the islands is very common.

Fourthly, Lake Zwai, although unrecognized, also provides functions such as assimilation of wastes, aesthetic values, tourism to the islands for birds, hippopotamus, etc. and even religious functions (Fig. 21). Birds Island is probably the smallest of five islands in Lake Zawai. No one inhabits this island except birds. For now, it is the best refuge the birds can find. Sometimes however fishermen land on this island to set their nets along the shores overnight and collect their catch early morning. The other most frequent visitors of Birds Island are tourists, students and researchers who have some interest in the bird fauna. The other islands as well, such as for instance Gelila are inhabited by numerous animal and plant life.

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Fig. 21: Diversity in lake resources and livelihoods, Lake Zwaï.

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Social Accountability in the Extractive Industries: A Review of the Ethiopian Experience

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1. Introduction

Resource rich countries of Africa, except few, have not succeeded in reducing poverty and improving the living conditions of the majority poor of citizens. In fact, studies show that extractions of resources have exacerbated poverty in such countries due to displacement of the indigenous peoples from their lands, territories and resources on which their livelihoods depend\(^2\). Lack of a proper social accountability system and practice are among the major factors contributing to the problem. As a result, social accountability has received attention from policy makers, policy researchers and donors. Moreover, indigenous peoples and their advocates are putting pressure on national governments and demanding international organizations, such as the United Nations, to stop the unsustainable and socially irresponsible exploitation of natural resources. This research is part of such initiatives towards improved social accountability of the extractive industries. This research, based on desk reviews, tries to discuss the concepts, actors and mechanisms of social accountability and then reflects on the Ethiopian experience in general and on legal regimes for social accountability in the extractive industries in particular.

2. Governance of the Extractive Industry: a Prelude

Governance is a very fluid term which may mean different things unless the context is clearly stated. In the context of a broader public sector, it generally refers to the process and institutions by which authority is exercised in a country. The capacity of governments to manage resources efficiently; formulate, implement and enforce sound policies and regulations; rule of law and respect for institutions that govern political, economic and social interactions; and transparency, accountability and equity in decision-making are key attributes of governance in the public sector\(^3\).

Governance has gained popularity in the development discourse in general and in Africa’s development agenda in particular. This is due to the fact that over the last 45 years, Africa’s

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1 This paper was prepared for the Public Dialogue on Governance and Transparency in Extractive Industries and Natural Resource Management Workshop organized by the Ethiopian Economic Association, August 25-26, 2010, Addis Ababa, Ethiopia.

2 United Nations Institute for Training and Research (not dated)

3 The International Bank for Reconstruction and Development (2005)
development problems have been mainly linked to governance issues\textsuperscript{4}. Today, African leaders are trying to apply the principles and attributes of democracy and good governance\textsuperscript{5}.

Extractive industries remain the economic bedrock for many developing countries, generating the main, if not the sole, source of fiscal revenues and foreign exchange earnings. Studies, however, indicate that most of the countries have been unable to effectively use the resources from extractive industries and hence, are characterized by poor economic performance where the majority of their populations live in poverty. In fact, in many instances large extractive industries even appear to have retarded economic and social development through a number of phenomena often referred to collectively as the "resource curse". Many of the problems are related to the quality of governance\textsuperscript{6}. A growing body of academic research and evaluations reveal that good governance is an essential ingredient to proper management of natural resources and distribution of benefits. Hence, it is crucial that governance issues be addressed prior to investment in the extractive industries\textsuperscript{7}.

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The governance of the extractive industries is required to substantially be improved not only to address the issue of revenue utilization and distribution of benefits, but also to address critical issues of social accountability\textsuperscript{8}. It is quite imperative that extractive industries become mindful of the emerging social concerns and priorities of communities, governments, civil society organizations and other stakeholders.

Governance encompasses both the demand and supply sides where multiple actors from multiple sectors play different roles for a proper functioning of the governance equation. The demand-side governance initiatives refer to citizen- or civil society-led activities to exact accountability from power-holders, producers and service providers. In this side of the equation, there are a number of initiatives and approaches ranging from social movements using protest, to communities negotiating and making decisions with the state, investors and service providers whose activities have a direct or indirect bearing on their environment, human rights and cultural and social values\textsuperscript{9}. The supply side of the governance equation refers to roles and activities of state and private investors to provide proactive measures to protect the natural environment and rights and interests of local communities.

### 3. The Concept of Social Accountability

Social accountability is an important extra-state approach that relies on civic engagement where ordinary citizens and civil society organizations actively participate directly and indirectly in exacting accountability\textsuperscript{10}. Social accountability can be defined as the ability to require that public officials,
private investors, and service providers answer for their policies, actions, and use of funds\textsuperscript{11}. Corporate social accountability for private business operators can be defined as “The continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.”\textsuperscript{12} This definition implies that any individual company has to integrate social (including human rights), environmental and economic concerns into its values and culture so that these values are reflected in that company’s policies, strategies, decision-making, and operations\textsuperscript{13}.

Social accountability should promote both responsiveness and accountability of government at various stages throughout the formulation, implementation, monitoring and evaluation of government policies and programs\textsuperscript{14}. This entails that accountability is not merely a once-off activity but a continual process between duty-bearer (public official) and rights-holders (citizens)\textsuperscript{15}. When such a system of accountability is successful, it improves the ability of citizens to realize their interests, protect themselves from arbitrary political powers, and to control the way in which public authorities behave in public matters\textsuperscript{16}.

Social accountability is a concept applicable to both public and private sector operators. However, neither social accountability initiatives nor mechanisms are the same in all contexts and societal affairs. Social accountability initiatives can be as diverse and multifaceted as society itself\textsuperscript{17}. The active participation and engagement of citizens and civil society groups in policy-making and implementation are however, important common denominators\textsuperscript{18}.

4. Social Accountability in the Extractive Industries

Extractive industries are high impact industries in terms of their economical, social and environmental aspects. Extractive industries are engaged in extracting nonrenewable natural resource, including oil and gas, metals, industrial minerals, coal and gemstones. The extractive industries have specific features which present a major challenge for social accountability and for environmental management\textsuperscript{19}. In the process of extracting, they may strip bare a piece of land and also affect other pieces of land through dumping of excess earth, as well as produce negative externalities in the form of solid waste, pollution of both air and water\textsuperscript{20}. Such activities of the extractive industries cause physically irreversible impact on topography and as well as quickly destroy the ecosystems on which

\textsuperscript{11}The International Bank for Reconstruction and Development (2005:1)
\textsuperscript{12}Prospectors and Developers Association of Sustainable Development and Corporate Social Responsibility (2007:1)
\textsuperscript{13}Ibid
\textsuperscript{14}Caddy, J., T. Peixoto and M. Mcneil (2007)
\textsuperscript{15}Affiliated Network for Social Accountability (2010:2)
\textsuperscript{17}Ackerman, J.M. (2005)
\textsuperscript{18}Affiliated Network for Social Accountability (2010:3)
\textsuperscript{20}Economic Commission for Africa (2007:25)
humans depend. Large scale modern extractive industries have major impacts on social and cultural values of the adjacent communities. Moreover, extractive industries are exploiting publicly owned (i.e. ‘social’) minerals, which are raising important questions regarding distribution of economic benefits, both in the current period and across generations\(^{21}\).

Generally, in almost all parts of the world, indigenous peoples' territories are richly endowed with minerals, metals, oil and gas. However, such an endowment has turned to be a curse to many indigenous peoples as this has attracted and continues to attract huge extractive industry corporations to their territories over which they have little control. The activities of these corporations have detrimental impacts on the environment, human rights and land of the indigenous people. Environmentally, indigenous people are suffering from erosion of biological diversity; pollution of soil, air and water; and destruction of whole ecological systems, among others. Displacement, arbitrary arrests, detentions, and lack of rights to land, territories and resources are the most common and rampant human rights violations\(^{22}\). The expansion of big extractive industries has also destroyed and undermined the livelihoods, traditions and religions of indigenous peoples. Big transnational and national corporations usually enter into indigenous peoples’ territories with a promise of development to the local peoples by providing jobs, construction infrastructure and payment of governmental taxes. In many parts of the world, these promises have little or no impact on the lives of the local peoples and hence, they still live in a situation of dire poverty\(^{23}\).

In the Manila Declaration, the voices of the Indigenous Peoples have been transpired as:

*On account of this situation, we have suffered disproportionately from the impact of extractive industries as our territories are home to over sixty percent of the world's most coveted mineral resources. This has resulted in many problems to our peoples, as it has attracted extractive industry corporations to unsustainably exploit our lands, territories and resources without our consent. This exploitation has led to the worst forms of environmental degradation, human rights violations and land dispossession and is contributing to climate change\(^{24}\).*

Due to the heavy physical, environmental, social, and cultural destruction the extractive industries are causing, as well as the human rights violations they face enormous challenges in maintaining their “social license to operate”, especially in developing countries. There are pressures from different corners, which among others include appeals from the sustainable development agenda, rising expectations and demands from civil-societies, indigenous communities, and human rights agencies\(^{25}\). In light of these pressures, issues of social accountability for extractive industries can be grouped among others into three major pillars: principles of human rights, of sustainability; and of social license to operate\(^{26}\).

### 4.1 Principles of human rights


\(^{22}\) Indigenous Peoples’ International Centre for Policy Research and Education (2009)

\(^{23}\) Ibid

\(^{24}\) The International Indian Treaty Council (2009)


Social accountability, from the viewpoint of human rights, refers to the obligation and acceptance by extractive corporations, like governments, to respect fundamental human rights in their organization and conduct of business. In this respect, key human rights principles would include the right to a clean environment; the right to land, territories and resources; the right to free prior and informed consent; and protection from involuntary resettlement. These have received due recognition within the international human rights law. There are ample provisions in the international human rights law which clearly stipulate and put substantial obligations on states to protect the rights of indigenous peoples in connection with resource exploitation. For example, the UN Human Rights Committee has stated that, in the name of development, a state does not have an unlimited freedom over the territories and resources of indigenous peoples; its freedom to encourage economic development is strictly limited by the obligations it has assumed under international human rights law rather than by a margin of appreciation. On the other hand, the Inter-American Commission on Human Rights stated that state policy and practice concerning resource exploitation for economic development cannot take place in a vacuum that ignores its human rights obligations. The African Commission on Human and Peoples’ Rights and other intergovernmental human rights bodies have similar views.

In the context of extractive industries, which have serious environmental impacts, the right to a clean environment is of central relevance. In fact, environmental impacts of the extractive industries are not limited to pollution of land, air and water. Extractive industries have caused destruction of the whole ecological systems, which have significantly contributed to the climate change. As a result, environmental right has received increasing attention and recognition, not only for its own sake, but also due to the fact that unless the physical environment is protected, other human rights (the right to economic and social development, to practice culture and ultimately the most fundamental of all human rights, the right to life) may be threatened. Hence, extractive industries are expected and required to take all the precautious measures to protect the environment and public health within the framework of laws, regulations and administrative practices of countries in which they operate and as well as international laws.

Rights to lands, territories and resources are fundamental to local peoples because their economic and social development, physical and cultural integrity, and their livelihoods and sustenance greatly depend on secure, effective and collective property rights. Secure land and resource rights are also essential for the maintenance of their worldviews and spirituality and, in short, to their very survival as viable territorial and distinct cultural communities. There is a profound relationship between indigenous peoples and their lands, territories and resources. Rights over land cannot be disassociated from the spiritual issues and hence, rights over land need to include recognition of the spiritual relation indigenous peoples have with their ancestral territories. Moreover, the economic base that land provides to the local people is not sufficient by itself unless it is accompanied by recognition of

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29 The International Indian Treaty Council (2009)
31 Economic Commission for Africa (2007:10)
the indigenous peoples’ own political and legal institutions, cultural traditions and social organizations. This shows that failing to recognize one aspect means to fail in all. Generally, in the absence of secure and enforceable rights to lands, territories and resources, the means of subsistence and cultural integrity of indigenous peoples are permanently threatened. Their land and territories are their resource base and ‘food basket’, as well as their source of *inter alia*, medicines, construction materials and household and other tools and implements. Hence, states should avoid laws and legal systems that arbitrarily declare resources which once belonged to indigenous peoples but become property of the state. If such laws and legal systems exist, they are discriminatory against the indigenous peoples, whose ownership of the resources predates the state, and are thus contrary to international law. Of course, states’ power to take resources for public purposes (with compensation) cannot be undermined; however, this should be exercised in a manner that fully respects and protects all the human rights of indigenous peoples. Indigenous peoples demanded that compensation for land and other resources should encompass not only remuneration for economic losses but also reparations for the social, cultural, environmental, and spiritual losses they endured.

Contemporary international law clearly recognizes the rights of indigenous peoples to participate in decision making and to give or withhold their consent to activities affecting their lands, territories and resources. Consent of the local communities must not be obtained under any kind of external influence; it must be freely given, obtained prior to implementation of activities and be founded upon an understanding of the full range of issues implicated by the activity or decision in question. The State party, in undertaking environmental impact assessments, should seek the informed consent of concerned indigenous communities prior to authorizing any mining or similar operations which may threaten the environment in areas inhabited by these communities. Indigenous peoples demanded that all proposed developments affecting their lands should be subject to a free, prior and informed consent of the local communities as expressed through their own representative institutions. The right to free, prior informed consent involves permanent processes of negotiation between local communities and developers, which by no means does not refer to nominal consultation; it is the right of indigenous peoples that extends to the extent of saying ‘no’ to projects that they consider as injurious to their environment, social and cultural values.

Expansion or new investment in extractive industries involve displacement of indigenous peoples and thereby expose them to involuntary resettlement. Such practices do have grave and disastrous harm to the basic civil, political, economic, social and cultural rights of large numbers of local peoples, both individual persons and groups. Of course, resettlement may not be avoided so long as there is displacement by the extractive industries; the issue, however, is that it must be carried out in a manner that respects the rights of affected persons. This is not merely an issue of compliance with the law, but

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33 Ibid
34 Ibid
35 CEE Bankwatch Network (not dated)
36 Ibid
37 Ibid
also constitutes sound development practice. Indigenous peoples have also demanded respect for their rights to their territories, lands and natural resources and that under no circumstances should they be forcibly removed from their lands.

For indigenous peoples, forcible relocation can be disastrous, severing entirely against their various relationships with their ancestral lands. As observed by the UN Sub-Commission, “where population transfer is the primary cause for an indigenous people's land loss, it constitutes a principal factor in the process of ethnocide;” and, “[f]or indigenous peoples, the loss of ancestral land is tantamount to the loss of cultural life, with all its implications.” Due to the importance attached to indigenous peoples’ cultural, spiritual and economic relationships to land and resources, international law treats relocation as a serious human rights concern. In international instruments, strict standards of scrutiny are employed and indigenous peoples’ free and informed consent must be obtained.

Key performance indicators of extractive companies to promote and ensure social accountability would be compliance with relevant human rights principles and codes of conduct, both in terms of corporate policies, the processes they employ in interacting with peoples and communities affected by their operations, and in terms of the substantive outcomes from their activities and investments.

4.2 Principles of sustainability

Extractive industry corporations need to conduct their activities in a manner that contributes to the broader goal of sustainable development. The environmental damages that occur during the process of resource extraction could be catastrophic since the processes cause irreversible damage and hence, are contrary to any vision of sustainable development. Indigenous peoples are voicing loudly that they have suffered disproportionately from the impacts of extractive industries since extractive industry corporations have been unsustainably exploiting their lands, territories and resources without their consent. In fact, indigenous peoples reject the myth of ‘sustainable mining’ by arguing that mining has not contributed to ‘sustainable development’ of the local people. They further argue that the living experiences of local people in many parts of the world and particularly in Africa show that exploration and exploitation of natural resources have caused serious social and environmental problems to the local people, and hence, such activities cannot be described as ‘sustainable’ development. By destructing the environment and the ecology on which the local people depend, the extractive industries are creating and exacerbating poverty rather than contributing to poverty alleviation. In light of such big concerns, indigenous peoples declare that urgent actions must be taken by all to stop and reverse the social and ecological injustice arising from the violations of their rights. Extractive industries should no longer pretend in the name of “sustainable mining”; they have

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38 Tebtebba Foundation Indigenous Peoples’ International Centre for Policy Research and Education (2006)
39 CEE Bankwatch Network (not dated)
40 Ibid
42 Economic Commission for Africa (2007:10)
44 The International Indian Treaty Council (2009)
45 CEE Bankwatch Network (not dated)
to focus on and ensure ‘sustainable development’ which is founded on three pillars that should be
given equal weight if such development is to be equitable namely environmental, economic and human rights.

Accepting principles of sustainability extends to the extent of limiting production by extractive
industry corporations in order to recognize the limited capacity of the physical and social
environments to carry the burdens of destructions caused by the industry. Relevant corporate policies
in this regard might include refraining from mining in protected and environmentally or socially
sensitive areas and taking action (including constraints on production) to reduce greenhouse emissions
and water usage.

H. Ali and O’Faircheallaigh have provided a more elaborated set of activities that are expected of the
extractive industry companies to minimize the effects of their activities on the environment and the
local people:

- Establish and maintain a system of environmental management appropriate to the enterprise,
  including the collection and evaluation of adequate information
- Establish measurable objectives and, where appropriate, targets for improved environmental
  performance, including periodically reviewing the continuing relevance of these objectives.
- Regularly monitor and verify progress towards environmental, health and safety objectives or
  targets.
- Provide the public and employees with adequate and timely information on the potential
  environmental, health and safety impacts of the activities of the enterprise, which could
  include reporting on progress in improving environmental performance and engaging in
  adequate and timely communication and consultation with the communities directly affected
  by the environmental, health and safety policies of the enterprises and by their
  implementation.
- Assess and address foreseeable environmental health, and safety-related impacts associated
  with the processes, goods and services of the enterprise over their full life cycle.
- Prepare an appropriate environmental impact assessment where these proposed activities
  may have significant environmental, health or safety impacts, and where they may be subject
  to a decision of a competent authority.
- Continually seek to improve corporate environmental performance

4.3 Social license to operate

Social license to operate is a pragmatic approach to social accountability of extractive industry
companies in which they have to accept the reality that they must secure and retain the support of the
communities affected by their operations. The driving force in this regard is not an issue of
demonstrating a commitment to human rights or environmental sustainability per se as companies are

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46 Ibid
required by law to do so. In securing social license to operate, companies are rather involved in a pragmatic calculation of what is required to win the degree of community support required to avoid delay or disruption to operations. The social license may ostensibly be easier to obtain from vulnerable impoverished communities and lead to subservience rather than true ‘buy-in’. At times when local communities keep quiet, companies should not misinterpret that as an endorsement of the project and hence a ‘social license’ is granted. Communities may keep quiet if they believe that they are in a weaker position, but resentment may build over time and lead to widespread resistance once communities have the social capital to protest and take direct action\textsuperscript{49}.

Local communities may resist and protest against an intended extractive activities for reasons of environmental, economic, cultural, social and other rights as defined by them. Meeting all the legal requirements and securing a legal license to operate is not a guarantee for a smooth and peaceful operation on the lands and neighborhood of local communities. Hence, companies have to understand environmental, economic, social, cultural and other issues of rights and interests from the view points of the local people, on which ‘social license to operate’ depends. Indigenous peoples do not simply reject development; they do so when they are not well informed or do not get opportunities to discuss and negotiate\textsuperscript{50}. Local peoples have the right to receive the information necessary for making informed decisions\textsuperscript{51}. Thus, companies need to clearly and sufficiently inform and discuss with the local peoples about the pros and cons of any project. Instead of listing and dictating the benefits from extractive projects, companies should give the opportunity to local peoples to identify the priorities of their needs and the degree of benefits they expect. On the basis of consensus, extractive companies need to undertake meaningful community development activities, which are essential functions for maintaining their social license to operate. Failure to deal with these issues often leads to a failure to secure, or the loss of, a social license to operate\textsuperscript{52}. In their declaration, indigenous peoples have made it clear that they do not reject development, but they demand respect and dignity in every course of action. Thus, they are empowered to fully participate in all development activities taking place in their jurisdictions, so as to determine their own priorities and needs\textsuperscript{53}.

5. Actions of Social Accountability in the Extractive Industries

Promoting and ensuring social accountability in the extractive industries require concerted efforts of multiple actors that among others include state actors, citizens, civil society organizations, private sector actors, and the media.

5.1 State Actors

It is obvious that ultimate responsibility for the management of a country’s natural resource wealth lies with that country’s elected government. The adoption of polices and practices that require adherence to and enforce standards of accountability and transparency is the principal means of

\textsuperscript{50} Ibid
\textsuperscript{51} WB-IMF (2004)
\textsuperscript{53} CEE Bankwatch Network (not dated)
ensuring sound management at all stages of natural resource exploitation – from extraction to the collection and utilization of revenues.\textsuperscript{54}

In a democratic system of governance, the legislature is the supreme law making organ of a state and hence, provides legal and regulatory frameworks, which provide the framework for sustainable and accountable utilization of natural resources\textsuperscript{55}. It also plays a key role of overseeing the executive. Legislative bodies also provide the critical link between citizens and their elected governments and can serve as an agent of citizens to promote accountability and transparency\textsuperscript{56}. Moreover, the legislature could play more robust roles in creating viable oversight mechanisms to monitor the collection and use of revenues from extractive industry revenues\textsuperscript{57}. Oversight functions of the legislature however, are not expected to be effective without adequate institutional arrangements that can ensure control, accountability and transparency. Knowing such challenges, the legislature establishes (either through Constitution or by an Act of Parliament) public oversight institutions, such as human rights and office of ombudsman, which perform important functions of protecting ordinary citizens against arbitrary use or misuse of power, as well as violations of human rights\textsuperscript{58}. Legislatures that are capable of playing these roles are well placed to help mitigate the various economic, environmental, human rights, and social-cultural risks posed by extractive industries\textsuperscript{59}.

The following are among the most specific roles legislatures play in promoting accountability and transparency in the extractive industries\textsuperscript{60}:

Establish and build mechanisms of accountability and transparency in public sector institutions, particularly those dealings with business and civil society. Mechanisms include approval and implementation of action against corruption and developing transparency policies, including consultative processes with stakeholders.

Reduce discretionary powers of the bureaucracy wherever possible, particularly those engaged in issuance of permits/licenses; provide anti-monopoly policies; and develop independent oversight bodies to enhance scrutiny of public institutions.

Build checks and balances to ensure independent and effective judiciary, vehicles of contestation and associated accountability arrangements.

In spite of such vital roles, the legislatures in many resource-rich countries and African countries in particular, face a host of challenges in fulfilling their mandates. Members of the Parliament in most African countries lack the skills and necessary information to fulfill their core functions\textsuperscript{61}. The technical complexity of the extractive industries further aggravated the capacity problem as many of

\textsuperscript{54} Bryan, S. and B. Hofmann (2007:14)
\textsuperscript{55} National Democratic Institute for International Affairs (2008)
\textsuperscript{56} Ibid
\textsuperscript{57} Bryan, S. and B. Hofmann (2007)
\textsuperscript{58} Affiliated Network for Social Accountability (2010:89)
\textsuperscript{59} Bryan, S. and B. Hofmann (2007)
\textsuperscript{60} Schloss, M., A. Stern, and A. Allderide (2007:9-10)
\textsuperscript{61} National Democratic Institute for International Affairs (2008)
the members of the parliaments have little or no knowledge about the extractive industries. A critical challenge is that legislatures are dominated by powerful executives and hence, regulatory mechanisms and legal frameworks are designed to serve the interests of the executive. In some countries, the problem is much more complicated by the fact that legislatures have personal or business ties to the extractive industry, presenting a conflict of interest in their oversight abilities.

Due to such and other challenges, domestic civic groups and international advocacy organizations are performing much better than African legislators in their efforts to promote increased transparency and accountability in the extractive industries. In spite of the limitations, it has to be noted that neither domestic nor international advocacy groups can substitute legislatures. Hence, civil society and other actors should focus on capacity building and working in partnership with legislatures so that synergy for promotion of social accountability can be created.

5.2 Citizens

Citizens are at the center of social accountability as they are most affected by the extractive industries. In democratic systems, citizens play important roles in promoting and ensuring social accountability. There are several mechanisms through which citizens play their roles, which include participation in public policy making and investment decisions, participatory budgeting, public expenditure tracking, citizen monitoring of public service delivery, citizen advisory boards, lobbying and advocacy campaigns.

There are roles specific to the extractive industries, which citizens play, especially indigenous peoples. These include:

- Negotiate and provide inputs to Indigenous Peoples’ Development Plans to be executed by companies to be engaged in resource extraction in their territories.
- Negotiate and enter into binding agreements with extractive companies and governments, which can be invoked in the courts if other means of redress and dispute resolution fail.
- Participate in environmental, social and cultural impact assessments to be carried out prior to the start of projects so that their ways of life are respected throughout the project cycle.

The success of indigenous peoples in effectively carrying out these roles however, greatly depends on the existence and practice of the right to free prior informed consent of peoples.

5.3 Civil society Organizations (CSOs)

CSOs have increasingly demonstrated their capacity and commitment to promote development alongside the market and state. CSOs play important roles in building social consensus necessary for

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63 National Democratic Institute for International Affairs (2008)
64 Bryan, S. and B. Hofmann (2007:11)
65 Kiwekete. H.M (not dated)
66 CEE Bankwatch Network (not dated)
economic reforms and long term development, in promoting effective governance by fostering transparency and accountability of public institutions; and in efforts to fight inequality and exclusion. The capacity and commitment of CSOs to accountability and transparency is increasingly being recognized and respected in practice. Their activities in this regard have transcended the public sector and are demanding companies to introduce sound reporting mechanism not only on their financial status but also on the environment and social corporate investment\textsuperscript{67}.

Furthermore, CSOs are seeking opportunities to work with legislative bodies, and promote legislative participation in extractive industry initiatives. In many countries, they identify and support reform-minded legislators who can influence legislation and promote transparency and accountability by conducting investigatory and oversight activities. They also establish relationships with relevant legislative committees and brief them on developments in the extractive industries and the impacts on citizens. In such a way they reinforce the link between legislators and their constituents\textsuperscript{68}.

Such and other roles of the CSOs depend on the legal, regulatory and policy frameworks, and political, socio-cultural and economic factors of a country. There are also institutional factors on the part of CSOs themselves. Therefore, the task of promoting and achieving social accountability via CSOs needs to be located within the above contexts\textsuperscript{69}. The challenge for CSOs is to find appropriate modes of engaging with the government, as most elements of their social accountability’s strategy suggest a confrontational approach to the government and the private sector. They have to devise more collaborative approaches since social accountability can only be strengthened by adhering to non-adversarial relationships with all stakeholders\textsuperscript{70}. CSOs and their networks should enhance collaborative strategies and closely work with governments and the private sector, which ultimately foster credible and effective multi-stakeholder partnerships towards promoting social accountability\textsuperscript{71}.

5.4 Private Sector Actors

Private companies should promote social accountability not only by way of mandatory legal obligations but also voluntarily. In recent years, there has been an explosion of voluntary initiatives intended to improve the social and environmental performance of business, which include socially-responsible investment and corporate sustainability reporting\textsuperscript{72}.

The private sector can perform more specific roles which include\textsuperscript{73}:

Enhance transparency through public disclosure of information not subject to confidentiality clauses (financial statements, principal transactions, etc.).

\textsuperscript{67} Good governance in the extractive industry (http://www.sarwatch.org/research/195-the-research-agenda.html?start=1 (accessed on 06/06/10)
\textsuperscript{68} Bryan, S. and B. Hofmann (2007:11)
\textsuperscript{69} Ahmad, R. (2008)
\textsuperscript{70} Affiliated Network for Social Accountability (2010:36)
\textsuperscript{71} Schloss, M., A. Stern, and A. Allderdice (2007:10)
\textsuperscript{72} International Union for Conservation of Nature (not dated)
\textsuperscript{73} Schloss, M., A. Stern, and A. Allderdice (2007:10)
Work with host governments and stakeholders to reduce opacity in contracts to enable greater transparency and where appropriate monitoring arrangements.

Establish codes of conduct, standards, and similar arrangements with proper control arrangements.

Work with civil society and governments to build incentives for efficient and effective anti-corruption in all transactions.

Introduce corporate social responsibility actions to assist in social development in project areas, particularly where government is unable to exercise an effective role as regulator or executing agent.

Industry associations are other important organized private actors. Sectoral and general membership business associations such as industry associations, councils, chamber of commerce or other forms play important roles in creating common standards, visions and strategies for corporate social accountability. Such associations have better access and capacity to introduce and enforce best practices of sustainable development, environmental and human rights protection, industry specific standards for corporate responsibility, social development packages, etc. Such activities promote responsible corporate business practices and citizenship through which company managers recognize social accountability as an important dimension of corporate strategy but not a liability for corporate success.

5.5 Media

This ‘supply side’ of accountability has not been sufficient on its own to create change in the landscape of social accountability because in actual practice, the government and private companies show little accountability to citizens. There are increasing calls for strengthening the ‘demand side’ of accountability where citizens and civil society actors demand accountability through forms of civic engagement. For example, advocacy and monitoring of government programs and investment projects in the extractive industries. Experts note that dynamism and success to promote social accountability through such engagements depend on the existence of strong and multi-channel media. Strong and professional media is needed because much of the information is available in forms that people, who are often time and resource poor, cannot easily understand, interpret or use. Through informed critique and investigations, an independent and well-informed media can play an important role in advancing greater social accountability from the extractive industry.

Several organizations have managed to utilize the media effectively and achieve results in their social accountability work. Civil society organizations have recognized and made use of the media in their advocacy work and often invest in different forms of media activities. While effective use of the media is vital for effective social accountability work, in many developing countries, they face several challenges.
capacity constraints in terms of funds, opportunities for advancement, censorship and access to information.78.

6. Mechanisms of Social Accountability

Social accountability mechanisms refer to a broad range of actions (beyond voting) that citizens, local communities and civil society organizations can use to hold government officials, civil servants, private investors, and other stakeholders whose activities and decisions have a direct and/or an indirect impact on the rights and interests of citizens.79 The concept of mechanisms of social accountability helps to develop a framework of how citizens demand and enforce accountability from actors affecting their affairs.80 Administrative rules and procedures, political forms of checks and balances, financial reporting, and auditing procedures are the first forms of accountability mechanisms.81 In its current usage however, social accountability mechanisms have applications in varied contexts. However, the common denominator is that each mechanism has to build citizen voice and create spaces for more pro-active engagement of citizens and civil society with the state and other actors.82 In broader context, the social accountability mechanisms include:

Right to information movements, citizen advisory boards and vigilance committees, public interest litigations, public hearings, citizens' charters etc.83.

Citizen participation in public policy making, participatory budgeting, public expenditure tracking, citizen monitoring of public service delivery, lobbying and advocacy campaigns.84.

Public demonstrations, advocacy campaigns, investigative journalism; social audits, citizen report cards, citizen jury or people’s verdict.85

The International Bank for Reconstruction and Development (World Bank) and others have briefly discussed some of the following mechanisms.86

Social Audits - refers to the process of involving communities in scrutinizing public projects and the amounts actually spent on them. Social audits are also used to plan, manage, and measure non-financial activities of projects and to monitor both the internal and external consequences of their social and commercial operations.

Citizen Report Cards - are surveys of social services that affect the poor and give service recipients an opportunity to grade the agencies that provide the services. Being initiated by the Public Affairs Centre in Bangalore, the mechanism is becoming popular and is being replicated in many parts of the world.

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78 Ibid
79 Kiwekete, H.M (not dated)
81 Affiliated Network for Social Accountability (2010:4)
82 Kiwekete. H.M (not dated)
83 Ibid
84 Ibid
85 Ahmad, R. (2008)
86 The International Bank for Reconstruction and Development (2005:11-15)
Citizen Jury or People’s Verdict - in this approach, residents of a given community are chosen by an oversight panel of NGOs and/or donor organizations to study an issue that will greatly affect that community. They are given information on the topic through different means that include talks, videos, and readings; have discussions with subject matter specialists; and deliberate all facets of the issue. Eventually they render their verdict on the issue to the community, the authorities, and the media.

Citizen Advisory Councils - this mechanism is designed mainly in efforts to make large-scale extractive industries more environmentally and socially accountable. The major conviction of this mechanism is that there is a need for establishing formalized structures to engage local communities and citizens in the oversight of those industries. Via an informed public oversight formal structure, this mechanism aims at improving social accountability through sustainable environmental practice, equitable share of revenue, organizationally entrenched social responsibility, and ethical behavior of extractive industries. It is recommended that all large-scale extractive industries should be required to establish well-funded, independent, and representative Citizen Advisory Councils to create well-informed citizens and provide opportunities for real engagement over the entire lifetime of extractive industry projects.

The following are additional mechanisms, which are believed to have specific relevance to promote social accountability in the extractive industries.

Raise public awareness (through a TV documentary, speakers tours, film festivals, fact sheets, several debates, media attention, reports, and websites) about legal regimes in each country, nature of operation and consequences of the extractive industries.

Mobilize support from governments (through briefings, visits to affected communities, reports, parliamentary hearings, an international conference, presenting solutions) operating at national, regional and local levels.

Influence companies and investors through campaigning on cases, visiting shareholder meetings, pressure from the public, presenting solutions, reports, and media attention.

Support civil society organizations in general and those in the South in particular through providing them a platform for their concerns, assisting them with expertise, contacts and knowledge, implementing joint research and developing joint solutions.

Generally, public dialogue forums through which citizens, civil society actors and other stakeholders actively debate on the management of national extractive industries stimulates improved accountability, transparency and oversight by governments. In many African countries, however, either public dialogue forums are ineffective or public discussions about the management and the proceeds from the extractive industries are discouraged and even sometimes considered taboo. Efforts exerted by citizens and civil society actors to seek accountability and transparency from the extractive

87 International Union for Conservation of Nature (not dated)
88 Friends of the Earth Europe (not dated)
industries has encountered harsh responses from governments since such efforts are against the vested interests of powerful government officials.\textsuperscript{89}

As a result, some of the mechanisms that have been created by governments in Africa do not practically function effectively or efficiently to promote accountability. Nevertheless, their mere creation has begun to gradually stimulate transparency in public discourse and increase civil society engagement on issues surrounding extractive industries. Moreover, the fact that MPs and environmentalists have started to voice together with civil society representatives has created opportunities for both to learn about each other’s perspectives on the extractive industries.\textsuperscript{90}

7. Social Accountability in Ethiopia

7.1 Politico-administrative and Economic Changes in Ethiopia: an Overview

Since its first Constitution in 1931, Ethiopia has been ruled by three different regimes: the Imperial (1931-74), Derg (1974-91) and the EPRDF (1991 to date). The Imperial and the Derg Governments established highly centralized political and administrative systems. Ever since it assumed power, the EPRDF has been introducing changes in the political, administrative and economic arenas, which greatly differs from those of the Imperial and Derg regimes. Politico-administratively, the establishment of self-governing regional and local governments in 1992 marked the end of highly centralized unitary governance structure and system in Ethiopia.\textsuperscript{91} The 1995 Constitution of the Federal Democratic Republic of Ethiopia (FDRE) introduces ethnic federalism and identifies nine ethnically based States or Regional Governments and one city administration (Addis Ababa) where both of them have their own legislature, executive and judiciary.\textsuperscript{92} The FDRE Constitution has laid the foundation and set out the goal of promoting democratic governance and economic development through a decentralized federal administration where the Ethiopian people exercise self-rule at different levels and advance their collective socio-economic interests in their respective jurisdictions.\textsuperscript{93}

Economic policy reform is one of the most important items on the reform agendas of the post-1991 Government of Ethiopia. In August 1991, the Transitional Government of Ethiopia adopted the New Economic Policy, which initiated the introduction of the stabilization and structural adjustment program. In 1992, the Government introduced a market-based economic policy that aimed at transforming the command economy into a market economy through active and wider participation of the private sector in the development of national economy. The Government has consistently made it clear the importance of the private sector and its commitment to the development of the sector.\textsuperscript{94}

\textsuperscript{89}National Democratic Institute for International Affairs (2008)
\textsuperscript{90}Ibid
\textsuperscript{91}Fenta M. (2007)
\textsuperscript{92}Proclamation No. 1/1995, A Proclamation to Pronounce the Coming into Effect of the Constitution of the Federal Democratic Republic of Ethiopia, Articles 47, 49 and 50
\textsuperscript{93}African Institute of Management, Development and Governance (2008)
\textsuperscript{94}Private Sector Development Hub/Addis Ababa Chamber of Commerce and Sectoral Associations (PSD Hub/AACCSA) (2009a)
Towards this end, the Government has issued and implemented a series of economic reform programs that have substantial implications for economic stabilization and structural adjustment.

Privatization of state-owned enterprises and liberalization of the financial sector for domestic inventors, introduced by the economic reforms over the last couple of years, have improved the landscape for the development of the private sector. As a result, the Ethiopian economy is in a state of change and its performance is improving well. For example, since 2003/04, the economy has registered an average of above 11 percent GDP growth. Reports of the International Monetary Fund (IMF) and African Development Bank indicated that Ethiopia was the fastest growing non-oil driven African economy in 2007. Global development projections for 2009 also showed that Ethiopia would be one of the four fastest growing economies in the world.

In spite of consecutive double digit GDP growth, the economy has not made any major structural transformation. Agriculture is still a dominant sector that accounts an average of 45 percent of the GDP for the period 2001/02-2008/09. The composition of the GDP over the same period shows the importance of the service sector over time, but still confirms that Ethiopia remains in the very early stage of structural transformation. In the same period, industry accounts for an average of about 13 percent of the GDP.

The role and share of the extractive industry in the economy is not significant. Since 1993, the Ethiopian Government has opened the extractive sector for local and foreign private investors. As a result, a considerable amount of investments have been made. Until November 2009, the amount of total private investment was about USD 1.1 billion, of which 95 percent was direct foreign investment engaged in the development of precious and industrial minerals. Currently, a number of junior exploration and world class mining companies are operating in Ethiopia for different mineral commodities. Ministry of Mines and Energy promises that there are wide ranges of future investment opportunities in Ethiopia, from which both investors (local and foreign) and the country can derive mutual benefits.

In spite of this, the scale of operation and contribution of the extractive industry to the economy is quite small in Ethiopia. Against the widely prevalent conviction of the country’s rich mineral potential, the contribution of the mining sector to the national economy has reached a maximum of six percent so far. This is due to a lack of well-organized and developed large scale extractive industries. So far, the only large scale developed extractive industry is the Lege-demi gold mine, located in the

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95 Among others include privatization of state-owned enterprises, liberalizing the investment climate, deregulation of the domestic prices, devaluation of foreign exchange, and abolition of all export taxes and subsidies
96 PSD Hub/AACCSA (2009b)
97 Ethiopia Investor (not dated)
98 African Institute of Management, Development and Governance (2008)
99 Fikremarkos M. et al. (2009)
100 National Bank of Ethiopia (2009)
101 World Bank (2007)
102 National Bank of Ethiopia (2009)
southern greenstone belt region, which is operated by a private company. This mine is estimated to have a reserve of 82 tons of gold and an average annual production of 3.6 tons of gold. Exploration and development activities for advanced stage primary gold exploration have been carried out in different parts of the country, so far, it has identified close to 100 tons of reserve of gold and other precious metals. Though operating at small scale, there is also an open pit mine of columbo-tantalite at Kenticha in the Adola belt. The mine has been operating since 1990 and started with a pilot plant producing about 20 tons per annum, which is currently producing over 190 tons of tantalite columbite ore per annum. Soda ash is being mined at Lake Abiyata in the rift valley where the reserve at Abiyata and the surrounding lakes exceeds 460 million tons of sodium carbonate, at a salt concentration ranging from 1.1 to 1.9 percent. The plant currently operates at semi-industrial scale and produces only about 5,000 tons soda ash per annum.\textsuperscript{104}

Kaolin, quartz and feldspar are also being mined by government enterprise from the Adola belt in southern Ethiopia. The construction industry is growing fast in the country and hence, cement and other factories that are engaged in the extraction and use of natural resources to produce raw materials are also growing fast. Cement factories are using high quality limestone, clay, gypsum and pumice as raw materials for cement production. There is also extraction and production of large amounts of construction minerals such as sand, gravel, aggregates, pumice, scoria, etc.\textsuperscript{105}

In the coming 15 to 20 years, the Mineral Sector envisions to establish a diverse, world-class, competitive and environmentally sound private sector mining industry, based on transparent free market principles, contributing not less than 10 percent of the GDP. When such a vision is realized, it will definitely generate huge amount of revenues. The contributions and impacts of the sector on the socioeconomic development of the country and on poverty eradication in particular depend on the legal and regulatory frameworks and practices of social accountability.\textsuperscript{106}

7.2 Social Accountability in Ethiopia: An overview

In addition to social accountability, which is broader in its scope, corporate reasonability is also new to Ethiopia, since corporate governance is generally a new phenomenon for the country. Both the legal frameworks and practices of corporate responsibility are very weak \textsuperscript{107}. Separation of management and ownership of enterprises is a fairly recent development since the economy was dominated by the public sector. Even now, “[…] Most of the Ethiopian business undertakings are different forms of family-based associations where there is no clear separation between ownership and control or management. Due to this situation, the Ethiopian business community is regarded as an ‘insider’ economy where the control of firms is held by limited number of families and their close circle of partners.”\textsuperscript{108} Corporate governance and oversight is weak not only in those family based business organizations but also in companies where there are elected board of directors.

\begin{thebibliography}{99}
\bibitem{104} Ibid
\bibitem{105} Ibid
\bibitem{106} Ibid
\bibitem{107} Minga N. (2008)
\bibitem{108} PSD Hub/AACCSA (2009a:104)
\end{thebibliography}
Since recently however, business and sectoral associations have realized the need for a strong corporate governance framework and code of business ethics\textsuperscript{109}. As a result, there are several initiatives and activities towards the improvement of corporate governance. The revision of the Commercial Code is considered one of the most important steps to move forward. Several other important activities that will improve the framework for corporate responsibility in Ethiopia are being undertaken by the Private Sector Development (PSD) Hub of the Addis Ababa Chamber of Commerce (ACCSA), in collaboration with the Ethiopian Government and professional associations\textsuperscript{110}. The most important activities of the PSD Hub include modernizing and computerizing company register, developing a standard for Accounting and Auditing practices, and Competition Policy Projects\textsuperscript{111}. Despite such activities that draw a positive scenario towards a responsible business environment; the focus is on ensuring accountability of corporate managers to shareholders and the government, but less to citizens at large.

Though the concept of social accountability is generally new to Ethiopia, the public sector is better familiar than the private sector. There are some initiatives and practices of social accountability in the context of public sector service delivery. Citizens Report Cards (CRCs) study, conducted by Poverty Action Networks of Ethiopia (PANE) and the Ethiopian Social Accountability Project (ESAP), which constitutes one of the four components of the Protection of Basic Services (PBS\textsuperscript{112}), are important initiatives to mention\textsuperscript{113}.

In 2005, a pilot survey of CRCs was conducted by PANE, which was the first of its kind in Ethiopia. The result was made public in 2006. The study\textsuperscript{114} aimed at creating awareness among the wider citizens about the performance of public services, and how to hold service providers accountable for results. On top of this, PANE has a strong conviction that such an exercise would bring stakeholders together, create awareness and build their capacity to promote transparent and accountability in service delivery. The study covered four regions of Ethiopia viz. Southern Nations, Nationalities and Peoples (SNNP), Oromia, Tigray, and Dire Dawa City Administration. On the basis of priority lists of services indicated in the Country’s Sustainable Development and Poverty Reduction Program (SDPRP), the survey covered water, health, sanitation, education, and agricultural extension services.\textsuperscript{115}

\textsuperscript{109} Ibid
\textsuperscript{110} Ibid
\textsuperscript{111} Ibid
\textsuperscript{112} PBS is a broad program of the Government of Ethiopia aimed at ensuring that the poor receive essential basic services according to their needs. It is supported by a Multi Donor (African Development Bank, CIDA-Canada, DFID-UK, the European Commission, KfW-Germany, Irish Aid, the Royal Embassy of the Netherlands and the World Bank) Trust Fund. PBS project was established in June 2006 by the Government of Ethiopia to ensure efficient, effective, responsible and accountable service delivery at local levels. The Project consists of for major components viz. protect the delivery of basic services; Deliver basic health services; Improve citizens’ understanding of regional and woreda budgets and make service facilities more accountable to the citizens they serve; and The Ethiopian Social Accountability Project
\textsuperscript{113} GTZ Ethiopia (not dated)
\textsuperscript{114} The study received financial support from UNDP Ethiopia, while the Public Affairs Foundation, India provided with technical support.
\textsuperscript{115} Eshetu B. (2006)
The study has clearly illustrated that if citizens are empowered, they have interest to actively be engaged in the process of performance assessment and in holding service providers accountable. The results of the study has attracted policy makers and implementers, service providers, media and other stakeholders having vested interest in promoting social accountability. At the macro level, the results have been used as inputs for PASDEP formulation while senior public managers have used the findings as a diagnostic tool in the process of monitoring the effectiveness of service delivery across wide array of areas. Administrators and planners have also gained insights as to how to improve service delivery investment and management. The media found the findings attractive in terms of its impact in promoting social accountability and ultimately reducing poverty. As a result, the findings have been placed on the larger public domain via different media, which is of vital importance to raise public awareness about social accountability. Dissemination of the survey results was carried out through a series of seminars, meetings and presentations at national and international conferences/workshops in which researchers, government officials and civil society organizations participated. This helped not only to raise awareness but also created opportunity for multi-stakeholder partnerships towards social accountability in Ethiopia. The whole exercise of the CRCs study helped PANE to build capacity and confidence to undertake further survey of CRCs\(^\text{116}\). As a matter of fact, PANE has conducted the second round of the CRCs and is on preparation to officially present the result.

The PBS/ESAP is the second initiative that aims at strengthening the use of social accountability approaches by citizens and civil society organizations as a means to make basic service (include sanitation, agriculture, health, and education) delivery more effective, efficient, transparent, responsive, and accountable. It also aims at engaging citizens and civil society organizations with decentralized public service providers and enhancing transparency of budget processes\(^\text{117}\). Enabling and energizing the civil society sector citizens as well as the public sector is at the center of ESAP, so as to achieve its objectives of promoting social accountability throughout Ethiopia\(^\text{118}\). Thus, the grant making initiative of the PBS/ESAP, awarded funds to 12 civil society organizations, on a competitive basis for a period of 17-18 months. The 12 civil society organizations, with their partners representing a total of 50 civil society organizations (operating in 80 woredas, towns, cities or sub-cities and hundreds of kebels of Ethiopia), have been involved in the implementation of ESAP. The project covers most of the regional states of Ethiopia that include Oromia, Tigray, SNNP, Amhara, Benishangul-Gumuz, Harari, and the Federal cities of Dire Dawa and Addis Ababa\(^\text{119}\).

Citizens are at the centre of social accountability, both as beneficiaries and actors; in light of this, the project has provided sufficient space for participation in which citizens have been involving in the introduction and establishment of instruments or tools of accountability that include: Right Based Approach, Community Score Card (CSC), Citizens Report Card (CRC) and Participatory Budgeting (PB) as well as Focal Group and Interface Discussions and Participatory Planning and Monitoring.\(^\text{120}\)

\(^{116}\) Ibid
\(^{118}\) GTZ Ethiopia (not dated )
\(^{120}\) Ibid
In order to create capacity and further disseminate and consolidate the social accountability concept and tools, citizens and also important actors that include local authorities, service providers, and civil society organizations (not limited to those involved in the implementation of ESAP) have been participating in dialogues with greater transparency\textsuperscript{121}.

Though social accountability was new for most of stakeholders of the initiative, the project has produced significant practices of social accountability, which serve as a learning initiative. The agenda of social accountability and the mechanism are being replicated and institutionalized by some civil society organizations and their partners, mostly based on existing structures and linked with ongoing programs. Improved relationships between civil society and regional/local governments are other important contributions of the ESAP, which are crucial for the development of democratic culture and healthy civil society-government engagement in all societal affairs\textsuperscript{122}.

\subsection*{7.3 Governance of the Extractive Industries in Ethiopia}

As discussed above, the types and scale of operations of the extractive industry in Ethiopia is very small, which is partly attributed to the governance problem of the sector. The limited initiatives of opening up of the sector for private investment by the Imperial regime were halted by the \textit{Derg} regime. During the entire period of the \textit{Derg} (19974-1991) private investment in the extractive industry was not allowed. Government institutions, with limited human, financial and technological capacity, were given the authority and responsibility to explore and develop the extractive industries of the country. Public sector monopoly has ended when the Transitional Government of Ethiopia introduced market oriented economic policy and the sector is experiencing a governance system different from the previous regimes\textsuperscript{123}.

The power and responsibilities of managing the extractive sector and the benefits thereof fall in the jurisdictions of the Federal and regional governments. Activities such as artisanal and construction minerals mining undertaken by domestic investors are under the regional governments’ jurisdiction while the Federal Government has full authority over large scale mining operations\textsuperscript{124}. Artisanal mining refers to all non-mechanized mining operations of gold, platinum, precious minerals, metals, slat, clay, and other similar minerals, an essentially natural nature carried out by Ethiopian individuals or group of such persons. Construction minerals mining is limited to mining of sand, gravel, stone (marble, granite, basalt, etc), and clay including non-metallic minerals used for construction purpose\textsuperscript{125}. The law has made it clear that all mechanized and large scale mining operations are under the Federal Government. Despite large-scale mining and all petroleum and gas operations are under the Federal Government’s jurisdiction, the Federal and regional governments jointly levy and collect taxes on incomes and as well as royalties form such operations\textsuperscript{126}.

\textsuperscript{121} GTZ Ethiopia (not dated)

\textsuperscript{122} Mai, G., Lulit M. and Workneh D. (2009)

\textsuperscript{123} Ministry of Mines and Energy, Federal Democratic Republic of Ethiopia (2009)

\textsuperscript{124} Proclamation No. 52/1993, A Proclamation to Promote the Development of Mineral Resources, Article 46(1)

\textsuperscript{125} Ibid, Article 2(2 &3)

\textsuperscript{126} Proclamation No. 1/1995, Article 98(3)
The power and responsibility of issuing and regulating licenses and administration of exploration activities are vested in the Ministry of Mines and Energy and bureaus of mines and energy for all mining operations that fall within the jurisdictions of the Federal and regional governments respectively. However, the Ministry of Mines and Energy represents and provides overall strategies for the development of the mining sector in the country. The Ethiopian Geological Survey, an autonomous institution under the Ministry of Mines and Energy, is responsible to undertake basic geological mapping, mineral exploration and other related geological activities, and generate basic geosciences data\textsuperscript{127}.

\textbf{7.4 Legal Regimes for Social Accountability in the Extractive Industries of Ethiopia}

Starting from the Transitional period (1991-1995), the Ethiopian Government has issued legal and regulatory frameworks, consistent with the new economic ideology of promoting private sector investment. On top of the FDRE Constitution, the following are important laws, which determine and regulate extractive operations in the country. Laws promulgated to specifically govern the extractive industry include Mining Proclamation No. 52/1993, Mining Income Tax Proclamation No. 53/1993, Council of Ministers Regulation No. 182/1994, and Transaction of Precious Minerals Proclamation No. 651/2009. Though environmental laws are not specific to the extractive sector, they consist of several important provisions that help to regulate and protect environmental impacts of extractive projects. Such laws include Environmental Protection Organs Establishment Proclamation No. 295/2002, Environmental Impact Assessment Proclamation No. 299/2002 and Environmental Pollution Control Proclamation No. 300/2002.

This section is devoted to the review of the above legal and regulatory frameworks with regard to how they intend to promote and ensure issues of social accountability in the extractive industries. As discussed earlier, the sector is expected to grow fast so as to contribute its best to the overall development of the country. In light of this aspiration, it is quite imperative to assess how well informed and comprehensive the legal regimes are in addressing issues of social accountability.

The legal regimes of the extractive industries in Ethiopia are reviewed hereunder in light of the three fundamental pillars (human rights, sustainability and social license to operate) of social accountability for the extractive industries.

\subsection*{7.4.1 Principles of human rights}

Conceptual discussions indicated that social accountability from the viewpoints of principles of human rights would include the right to a clean environment; the right to land, territories and resources; the right to free prior and informed consent; and protection from involuntary resettlement\textsuperscript{128}.

The FDRE Constitution recognizes a whole spectrum of human rights. The Country has ratified major international instruments that guarantee human rights. Though established recently, it has also created

\begin{thebibliography}{99}
\bibitem{127} Ministry of Mines and Energy, Federal Democratic Republic of Ethiopia (2009)
\end{thebibliography}
institutions including the Human Rights Commission and the Institution of the Ombudsman, designed to enforce human rights\textsuperscript{129}.

Article 44(1) of the FDRE Constitution guarantees the right to clean environment, which states “All persons have the right to a clean and healthy environment.” This is an important parent legal provision that protects, if properly enforced, citizens from heavy environmental pollution and destruction caused by the extractive industries. Article 92(1&2) reasserts that the government should work hard to ensure that all Ethiopians live in a clean and healthy environment. No matter what the economic contributions of a project, the Constitution pays due emphasis to the rights of citizens and as well as protection of the natural environment. To this end, the design and implementation of development programs and projects are required to be carried out in a way that does not cause any major damage or destroy the natural environment. Article 3(1&2) of Proclamation No. 300/2002\textsuperscript{130} also states that no person (natural or judicial) shall pollute or cause any other person to pollute the environment. Moreover, the law states that no project, that has a negative environmental impact shall commence implementation without environmental impact assessment and authorization of the same by the Environmental Protection Authority and relevant regional environmental agency\textsuperscript{131}.

The above legal provisions are general, applicable to all sectors of the economy. There are also legal provisions, which specifically address the extractive industry. Every enterprise engaged in the extractive sector is required to conduct extraction/mining operations in such a manner that ensures the health and safety of its agents, employees and other persons, and as well as minimizes the damage or pollution to the environment\textsuperscript{132}. Against the strong provision of the Constitution that prohibits any economic activity that may cause damage or destroy the environment, the above legal provision is loose, only demanding that enterprises minimize environmental damage and pollution. The provision opens a Pandora box for subjective judgment of the degree of tolerable environmental impact. Though environmental impact assessment is a requirement to secure large scale mining license\textsuperscript{133}, legal provisions specific to the extractive sector seem to focus on rehabilitation instead of protecting the environment before the ecosystem is destabilized. “The holder of a small or large scale mining license shall progressively restore or reclaim the land covered by the license and, if applicable, a lease so that, prior to termination of the license, the area has been completely restored or reclaimed for beneficial future use, unless the Licensing Authority approves otherwise.”\textsuperscript{134} Such excessive dependence on restoration and reclamation encourages an unwarranted intervention into the natural environment while such activities hardly restore the natural ecosystem to its original status.

The Environmental Protection Authority or the relevant regional environmental agency is fully authorized to take administrative or legal measure against any person (natural or judicial) who violates this law. The law states that the Environmental Protection Authority or the relevant regional

\textsuperscript{129} African Institute of Management, Development and Governance (2008)
\textsuperscript{130} Proclamation No. 300/2002, Environmental Pollution Control Proclamation
\textsuperscript{131} Proclamation No. 299/2002, Environmental Impact Assessment, Article 3
\textsuperscript{132} Proclamation No. 52/1993, Article 26(3)
\textsuperscript{133} Council of Ministers Regulation No. 182/1994, Council of Ministers Regulations on Mining Operations, Article 5(2/d)
\textsuperscript{134} Ibid, Article 29(5)
environmental agency shall assign environmental inspectors who are authorized to inspect and ensure compliance with environmental standards and related requirements. The law authorizes not only environmental inspectors but also any person to lodge a complaint at the Authority or the relevant regional environmental agency against any person allegedly causing actual or potential damage to the environment.

Article 37(2/b) of Regulation No. 182/1994 states that violation of obligations by any mining enterprises relating to health and environment shall be guilty of primary infractions. The sanction for an act that constitutes such infraction may include an immediate revocation of the license to which the infraction is related and a fine not exceeding Birr 5,000. Revocation of the license has a good deal of deterring capacity, the fine however, is so nominal to deter any act or behavior.

Reviews of the literature show that rights to lands, territories and resources are important elements of the human right pillar of social accountability. These rights are fundamental to local peoples because their economic and social development, physical and cultural integrity, and their livelihoods and sustenance greatly depend on secure, effective and collective property rights.

The FDRE Constitution guarantees to every Ethiopian citizen the right to ownership of property. “The right to ownership of rural and urban land, as well as of natural resources, is exclusively vested in the State and in the peoples of Ethiopia. Land is common property of the Nations, Nationalities and Peoples of Ethiopia and shall not be subject to sale or to other means of exchange.” In the rural context, the law further elaborates that Ethiopian peasants and pastoralists have constitutional rights to obtain land for grazing and cultivation without payment and protection against eviction from their possession. Individuals and communities have mainly use and associated rights, which undermine citizens’ right to effectively exercise property rights on their land. In fact, the law has made it clear that Government is the guardian that holds, on behalf of the People, land and other natural resources and to deploy them for their common benefits and development. This further undermines the barging power of individual citizens’ and local communities’ as investors principally deal with the Government, which has absolute authority to deploy land and other natural resources. Hence, the law has limitation to promote and ensure social accountability from the view point of rights to land, territories and resources.

Rights to land, territories and resources are fundamental not only for the promotion of economic interests of the local people but also for the maintenance of their worldviews and spirituality and to their very survival as viable territorial and distinct cultural communities. The FDRE Constitution has provided with ample provisions aimed at ensuring such rights. It is Government’s duty to support the growth and enrichment of cultures and traditions that are compatible with fundamental human rights.

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135 Proclamation No. 300/2002, Article 7
136 Ibid, Article 11
137 Ibid
139 Proclamation No. 1/1995, Article 40 (1&3)
140 Ibid, Article, 40 (4 & 5
141 Ibid, Article 89 (5)
and dignity. More specifically, the Government has responsibility to protect and preserve historical and cultural legacies. To this end, “Government may exclude any area from mining operations that is related to sites of historical, cultural or religious significance.” The law also added that village community, burial ground and land under cultivation fall under prohibited areas for the operation of extractive industries. Nonetheless, the law gives discretion to the licensing Authority to decide otherwise instead of completely banning extractive operations in these sites. At the time that prohibition is accepted, the law requires mining operations only to be 100 meters away from such sites. Due to heavy operations, such a distance is not enough to avoid negative impacts of extractive industries on physical, social and cultural assets of the local community.

Indigenous peoples’ rights to participate in decision making and to give or withhold their free consent to activities affecting their lands, territories and resources are important mechanisms to promote and ensure social accountability. Their consents should be secured freely before the implementation of any project in their territories. Government agencies, in undertaking environmental impact assessments, should seek the informed consent of concerned communities prior to authorizing any mining or similar operations which may threaten the environment in areas inhabited by these communities.

The FDRE Constitution states that “Nationals have the right to participate in national development and, in particular, to be consulted with respect to polices and projects affecting their community.” The law further states that local peoples have the right to full consultation and to the expression of views in the planning and implementation of environmental policies and projects, which affect them directly. The law requires that before securing license for mining (small and large) operations, registration of each application should be followed by a notice that has to be published on newspapers which have wider circulation. On the basis of this notice, any person can file a written objection at the office of licensing authority within thirty days. However, the right to free prior informed consent involves permanent processes of negotiation between local communities and developers. The law does not require this; instead, it empowers the applicant to delimit the area for which the application is sought prior to application with out the consents of legitimate occupants. Moreover, the legal provisions, lack appropriate mechanisms of informing the local people on whose land and territories the mining project is to be implemented. In the Ethiopian context, neither newspapers have sufficient distribution coverage nor have the rural local people the skill and culture of reading newspaper. Hence, publishing a notice on newspaper does not provide local peoples with sufficient opportunity to be well informed of such plans.

142 Ibid, Article 91(1)
143 Ibid, Article 41(9)
144 Proclamation No. 52/1993, Article 6
145 Régulation No. 182/1994, Article 11(2)
146 Ibid, Article 11
147 Ibid
148 Proclamation No.1/1995, Article 43(2)
149 Ibid, Article 92(3)
150 Régulation No. 182/1994, Article 6(2)
151 Ibid, Article 7(1)
152 Ibid, Article 25 (1)
Indigenous peoples have rights on their land, territory and resources to the extent of saying ‘no’ to projects that they consider as injurious to their environment, social and cultural values. In this regard, the law does not give such authority to the local people; it is up to the Licensing Authority to decide on the objection. Any decision against the interests of the local people creates potential dispute between the mining companies and the local community over the control and management of natural resources. If such practices persist, local people will emerge as the main resistance group against the advance of mining and other extractive activities.

Displacement of indigenous people from their land and territories, due to expansion of extractive industries, constitute grave violation of human rights. It causes disastrous harm to their individual and collective basic civil, political, economic, social, and cultural rights. Of course, it may not be possible to totally avoid displacement and resettlement, since states’ power to take land and resources for public purposes cannot be undermined. The issue, hence, is to execute resettlement in a manner that respects the rights of affected persons.

Proclamation No. 52/1993, the FDRE Constitution and Regulation No. 182/1994 have provided legal provisions, which address the issue of displacement due to projects. “All persons who have been displaced or whose livelihoods have been adversely affected as a result of State programs have the right to commensurate monetary or alternative means of compensation, including relocation with adequate State assistance.” The Mining Proclamation also states that “[…] if the licensee’s mining operations require that the other occupant be displaced, the licensee shall attempt to negotiate the compensation payable to such occupant.” The licensee should pay compensation to a legitimate occupant for all properties it has destroyed and/or damaged within or outside the licensed area. In any resettlement program, due to displacement caused by extractive and other projects, indigenous peoples’ free and informed consent and agreement with the offer must be obtained. Moreover, compensation should encompass not only remuneration for economic losses but also reparations for the social, cultural, environmental, and spiritual losses local communities endure. In this regard, the Ethiopian legal regime suffers from short of meeting such important principles of social accountability. Neither people are compensated for non-economic losses nor are their consents mandatory before eviction. The law has made it clear that compensation will be made only for properties destroyed and/or damaged by extractive operations. In case the of disagreement, the licensing authority may cause displacement of legitimate occupants against their consent. The law clearly stipulates that “If the occupant refuses to be displaced or to agree on the amount of compensation, the Licensing Authority may cause the expropriation of immovable property if any,

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153 CEE Bankwatch Network (not dated)
154 Proclamation No.52/1993, Article 24 (2)
156 Proclamation No.1/1995Article 44 (2)
157 Proclamation No.52/1993, Article 24 (2)
158 Ibid, Article 24 (3).
159 CEE Bankwatch Network (not dated)
and the eviction of such occupant on behalf of the licensee’s mining operations, subject to the licensee’s payment of compensation determined by the Licensing Authority.”

7.4.2 Principals of Sustainability

Principles of sustainability are at the centre of the extractive industries since the environmental damage they cause could be catastrophic to the extent of irreversible nature, which is against the principle of sustainable development. Indigenous peoples in many parts of the world, particularly in African countries have experienced such effects of the extractive industries. Hence, governments should provide legal protection against any practice of unsustainable resource exploitation that destroys the ecosystem on which the local peoples’ livelihoods depend. Development that does not serve the needs of the local people should not be tolerated.

The FDRE Constitution defines that “The basic aim of development activities shall be to enhance the capacity of citizens for development and meet their basic needs”. The Constitution further recognizes the right of the peoples for sustainable development, which states “The Peoples of Ethiopia as a whole, and each Nation, Nationality and People in Ethiopia in particular have the right to improved living standards and to sustainable development”.

The Ethiopian Government has also provided a Proclamation that requires every project owner who plans to implement a project that has a negative environmental impact to undertake an environmental impact assessment; identify the likely adverse impacts of the project; incorporate the means of their prevention or containment; and submit the report to the Environmental Protection Authority or the relevant regional environmental agency. Large scale extractive operations fall in this category and hence, such projects are required to navigate through environmental impact assessment processes.

The principles of sustainability demand not only understanding, planning and mitigating the impacts but also extend to limiting extraction of the natural resources by extractive industry corporations so that irreversible impacts on the natural and social environments could be minimized. Such limitations should be clearly stated by the laws governing the operations and development of the sector. In this regard, the Ethiopian Mining Proclamation does not put any restriction on operations except for mineral water extraction, which states “The mining license of mineral water may specify the amount and rate of production, which shall generally be limited to that which permits the renewal of the water aquifer, and the horizon or depth from which the water may be extracted.” For other extractive operations, instead of putting such limitations, the law guaranteed extractive companies the right for an unlimited exploitation, which is stated as “The license area shall comprise all of the land within its boundaries and all sub-soil thereunder to an indefinite depth within the vertical plans passing through

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160 Proclamation No.52/1993, Article 24 (2)
161 CEE Bankwatch Network (not dated)
162 Proclamation No.1/1995, Article 43(1)
163 Proclamation No. 299/2009, Article 7(1)
165 Proclamation No. 52/1993, Article 20(2)
each boundary.” This is generally against the principle of sustainable development, which may cause irreversible damage on the ecosystem.

7.4.3 Social license to operate

As discussed in the literature review section, social license to operate is a pragmatic approach to social accountability of extractive industry companies. This pillar of social accountability does not depend on the legal and regulatory frameworks promulgated by governments. It depends on the understanding and readiness of extractive corporations to accept and practice social license to operate. The issue is not a matter of adhering or violating human rights of the local people as these are taken care of by the law. Instead, it is a matter of promoting and securing cohesive relationships with the local people for peaceful operation in their localities. It is a process of “selling” the project to the local people and this requires sitting down, discussing and negotiating with the local people in regard to environmental, economic, social, and cultural interests in their own understanding and terms.

As stated above, social license to operate is a pragmatic issue that requires empirical study of the practices of extractive companies so as to discuss scenarios and draw conclusions. Hence, the Ethiopian experience in this regard cannot be discussed due to the desk review nature of this research.

Previous discussions of the legal regimes for social accountability in the extractive industry in Ethiopia, from the view points of human rights and principles of sustainability, show that in spite of loopholes, the legal and regulatory frameworks provide reasonably sufficient provisions to promote social accountability of the extractive industries. In addition to the provision of legal and regulatory frameworks, the Ethiopian Government has demonstrated its interest to promote social accountability of the extractive industries through an official application submitted to the Board of Extractive Industries Transparency Initiative (EITI) to join the initiative. The application was submitted in October, 2009 on the basis of which EITI assigned reviewers to assess Ethiopia's pledge to join the initiative. However, in February 2010, Ethiopia’s candidacy was denied by EITI’s Board, which stated that the new civil society law of Ethiopia bars civil society groups from engaging in human rights and governance issues. The report stated that these activities are limited only to local charities and societies that receive over 90 percent of their income from domestic sources. This, the Board states, restricts EITI from implementing its set of principles since its course of action requires not only an active involvement of extractive industry companies, but also other partners from wider society, including all categories of CSOs.

7.5 Actors of social accountability in Ethiopia

Review of the general social accountability practices and the legal regimes for social accountability in the Extractive industries show that government, private sector, citizens and civil society organizations participate directly and indirectly in promoting social accountability in Ethiopia.

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166 Ibid, Article 32
State Actors

The power of enacting laws is vested in the House of Peoples’ Representatives (HPRs) and accordingly the House has been enacting laws, which govern the utilization and conservation of land and other natural resources.\(^\text{168}\) Oversight of the executive is a major function of the HPRs. Studies however, show that, though improving, the House does not effectively carry out this function due to capacity problems and lack of sufficient independence. Most members of the legislature lack knowledge of standard operating procedure on legislative oversight, and duties and responsibilities of the executive\(^\text{169}\). However, a more serious concern is the dominance of the Executive over the Legislature.\(^\text{170}\) Critics assert that the Ethiopian Legislature is dominated by a powerful ruling party-Ethiopian Peoples’ Revolutionary Front (EPRDF) and hence, has few real powers to effectively check on the executive.\(^\text{171}\)

In spite of its limited oversight capacity, the House has established the Human Rights Commission and the Institution of Ombudsman, which are key institutions to enforce the observance of human rights\(^\text{172}\). The effectiveness of these institutions to promote and ensure social accountability still depends on their independence and capacity, which requires further study.

The Council of Misters is another high level state actor, which has a power to enact regulations, and to formulate and implement economic, social and development polices and strategies. On the basis of this power, it has provided with the Mining Regulation that consists of several important provisions towards social accountability.\(^\text{173}\) Though law making with regard to land and natural resources utilization is the prerogative of the Federal Government, regional States have been given the power to administer land and other natural resources in accordance with Federal laws\(^\text{174}\). Hence, they are important actors to promote and enforce social accountability in their jurisdictions.

The Ministry of Mining and Energy, and the Environmental Protection Authority are the two most important Federal institutions engaged in the management of natural resources and protection of the environment respectively. The Ministry of Mining and Energy is specifically responsible for issuing license and inspecting activities of large scale extractive operations so as to ensure that operations are carried out in accordance with the law.\(^\text{175}\) It is fully empowered to license and revoke whenever a licensee fails to observe and meet legal requirements. The Ministry is also responsible for determining compensation for properties when the licensee and legitimate occupants fail to agree with the preparation to the research conference. A more serious concern is the dominance of the Executive over the Legislature. Critics assert that the Ethiopian Legislature is dominated by a powerful ruling party—Ethiopian Peoples’ Revolutionary Front (EPRDF) and hence, has few real powers to effectively check on the executive. In spite of its limited oversight capacity, the House has established the Human Rights Commission and the Institution of Ombudsman, which are key institutions to enforce the observance of human rights. The effectiveness of these institutions to promote and ensure social accountability still depends on their independence and capacity, which requires further study.

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amount. Regional mining and energy bureaus have the responsibility and authority to exercise similar functions with that of the Ministry with regard to artisanal and construction mining.

The Environmental Protection Authority has been assigned the major responsibly of coordinating environmental protection activities and measures to ensure that the environmental objectives provided under the Constitution are realized. Towards this end, the Authority is empowered to formulate policies, strategies, laws and standards that foster social and economic development in a manner that enhances the welfare of humans and the safety of the environment for sustainable use. The Authority has identified and provided standards for projects that strictly require environmental impact assessment before commencing implementation, among which large scale extractive operation is one. No project of this category could start operation without authorization from the Authority or the relevant regional environmental agency. The environmental impact assessment report of any project is subject to review by the Authority or the relevant regional environmental agency. If experts’ opinions and public comments demonstrate that the project has a significant negative impact, the Authority or the relevant regional environmental agency refuses the implementation of the project. To avoid any loophole, the law demands investment and trade licensing agencies not to issue licenses and permits for projects that require environmental impact assessment without ensuring that the Authority or the relevant regional environmental agency has approved the project. This protects the environment and the local people before they are affected by the project. The law also authorizes the Authority and regional environmental agencies to monitor implementation of authorized projects in order to ensure that they comply with their obligations as stated by the law. To this end, the Authority and relevant regional environmental agency, assign environmental inspectors. The Authority or the relevant regional environmental agency can take administrative or legal measures against any person who, in violation of the law, causes environmental damage. All these provisions stand for and demand social accountability from extractive companies.

Citizens

It has been learned from the review of the literature that citizens are at the center of social accountability, as they are most affected by the extractive industries. If they are given the opportunity to participate in public policy making, investment decision making, environmental impact assessment and the like, they can play important roles, which have significant impact on social accountability. The mining and environmental legal frameworks, which have to do with the issues of social accountability in the extractive industry, have provided certain provisions that create opportunities for citizens to participate in decision making and object any investment that has potential negative impacts to their environment and economic, social, cultural and religious interests. The Environmental

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176 Ibid, Article 24(2)
177 Ibid, Article 46
178 Proclamation No. 295/2002, Articles 5&6
179 Proclamation No. 299/2002, Article 3(1)
180 Ibid, Article 9(2)
181 Ibid, Article 3(3)
182 Proclamation No. 300/2009, Article 7
183 Ibid, Article 3(2)
Protection Authority and relevant regional environmental agencies are required by law to seek public comments while reviewing projects’ environmental impact assessment\textsuperscript{184}. The law further elaborates as\textsuperscript{185}:

*The Authority or the relevant regional environmental agency shall make any environmental impact study report accessible to the public and solicit comments on it.*

*The Authority or the relevant regional environmental agency shall ensure that the comments made by the public and in particular by the communities likely to be affected by the implementation of a project are incorporated into the environmental impact study report as well as in its evolutions.*

The above provisions however, do not give the power to the community to reject a project, which they believe in that it is totally against their environmental, economic, social, cultural, and religious interests. Such powers are discretionary powers of the Authority or the relevant regional environmental agency. Article 11 of Proclamation No. 300/2009 authorizes any citizen to lodge a compliant at the Authority or the relevant regional environmental agency against any person allegedly causing actual or potential damage to the environment. In this case, the law provides the person who lodged the complaint the opportunity to instate a court case if the Authority or the relevant regional environmental agency fails to give decision within thirty days or when the person is dissatisfied with the decision.

Local peoples have the right to directly negotiate about the amount of compensation with any licensee whose investment in mining operation causes displacement\textsuperscript{186}. This is an important provision that has substantial impact on social accountability of the extractive industry. Nonetheless, the legal provision does not fully protect citizens from involuntary resettlement since it does not empower the local people, as legitimate occupants of land, territories and resources, to say no for reasons they do not want to be displaced or do not agree with the amount of compensation. It is up to the Authority or the relevant regional environmental agency to decide on the disagreement.

Citizens’ participation in extractive operations is not limited to a situation that involves displacement of legitimate occupants. Though local peoples have limited access to required information, any person can file a written objection to the grant of any kind of license for mining operation at the Ministry of Mines and Energy or the relevant regional mining and energy bureau.\textsuperscript{187} In spite of the limitation of access to information, this creates an avenue for local people to participate in investment decision.

**Private sector sectors**

Private companies are the principal investors in the extractive industries and the laws, which provide the right to invest, require them to adhere to and ensure social accountability. The involvement of private sector actors in promoting and ensuring social accountability should not be associated only

\textsuperscript{184} Proclamation No. 299/2002, Article 9(2)
\textsuperscript{185} Ibid, Article 15
\textsuperscript{186} Proclamation No. 52/1993, Article 24(2)
\textsuperscript{187} Regulation No. 182/1994, Article 7
with mandatory legal obligations, but also to voluntary interests. This is because of the fact that adhering to legal requirements is not a guarantee to secure social license to operate.\(^{188}\)

As previously discussed, social accountability is generally new to the private sector. In fact, not only socially accountability but also the standard concept and practice of corporate responsibility are very new to the Ethiopian private sector. As a result, self-initiated and organized effort of the private sector to promote social accountability is negligible. In fact, the private sector is blamed for its excessive inclination towards corruption instead of promoting transparency and accountability. Private business officials hardly differentiate what they call an acceptable marketing scheme and clear-cut corruption.\(^{189}\) The private sector seems to have resigned corrupt practices as a necessary cost of doing business.\(^{190}\)

The law however, has assigned important roles and responsibilities to investors, which are significant to promote and ensure social accountability in the extractive industry. As discussed earlier, it is the duty and responsibility of each project owner to conduct environmental impact assessment. The project owner in his/her environmental impact assessment report should clearly identify the likely adverse (direct and indirect) impacts of his/her project and as well as incorporate the means of their prevention or containment.\(^{191}\) If the intended extractive operation involves displacement, the project owner has to directly negotiate with legitimate occupants to determine the amount of compensation to be paid to the occupants in return to the loss of their properties.\(^{192}\) In terms of contribution to the local development activities, though not mandatory, the law states that the Licensing Authority may require the licensee to cooperate and contribute financially in the construction and maintenance of infrastructure within the areas covered by the license or lease.\(^{193}\) The development of such infrastructure is limited within the areas of the license and lease, hence, it cannot in strict sense be considered as contribution to the local development. Such developments are rather vital to the extractive operations than to the local peoples. Moreover, the local people can benefit little since they have restricted access to the areas covered by the license and lease.

**Civil society organizations and the media**

The Ethiopian Government believes that civil society organizations are important actors in the socio-economic development endeavors.\(^{194}\) In spite of this, there are several criticisms against the new civil society law enacted by the Ethiopian Government. The new law is considered as having serious impact on civil society organizations engaged in advocacy and human rights. For example, as mentioned earlier, the Board of Extractive Industries Transparency Initiative (EITI) rejected

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\(^{188}\) International Union for Conservation of Nature (not dated)

\(^{189}\) Kebour G. (Not dated)


\(^{191}\) Proclamation No. 299/2002, Article 7(1)

\(^{192}\) Proclamation No. 52/1993, Article 24(2)

\(^{193}\) Ibid, Article 25(3)

\(^{194}\) African Institute of Management, Development and Governance (2008)
Ethiopia’s application to join the initiative mainly due to its strong reservation with the new civil society law195.

Reviews of principal laws of the extractive industries in Ethiopia revealed that the roles and responsibilities of civil society organizations and the media have not been addressed. Nonetheless, it is difficult to conclude that civil society organizations and the media have no role in promoting social accountability in Ethiopia. Though limited to public sector service delivery, discussions under section 6.2 show different initiatives towards building social accountability systems through donor-civil society-government partnerships. The PBS/ESAP and Citizens Report Cards are interesting initiatives in which citizens are at the centre of promoting and ensuring social accountability. The media is also playing a major role of publicizing the methods and results achieved.

7.6 Mechanisms of Social Accountability in Ethiopia

On top of strong legal and regulatory frameworks, social audits, citizen report card, citizen jury or people’s verdict, and citizen advisory councils are the most popular mechanisms of promoting social accountability. In fact, such mechanisms have meaningful and sustainable impacts only when they have a legal basis. Of course, legally recognized mechanisms are not sufficient to promote social accountability in the extractive industries since the principle of social license to operate does not much depend on legal issues, but on the capacity and commitment of companies to sufficiently engage local people.

Despite the initiatives discussed above, so far, the most predominant mechanisms of enforcing social accountability in the extractive industries in Ethiopia is seeking compliance with the laws through inspections carried out by inspectors assigned by the Ministry of Ming and Energy, and the Environmental Protection Authority. This study however, has not assessed the extent and effectiveness of the legal and regulatory mechanisms to promote and ensure social accountability on the ground. Such assessments require empirical investigation.

8. Conclusions

Let alone applications, the concept of social accountability is pretty new to Ethiopia in general and to the private sector in particular. In fact, the Ethiopian private sector is less familiar not only with social accountability but also with issues of corporate governance in general. There are some initiatives (both by government and private sector associations) towards improving corporate governance. Nonetheless, such initiatives are not sufficient against increasing an ethical business practice and engagement of the private sector in corrupt practices.

Issues and concerns of social accountability constitute important components of human rights. In light of this, the legal regimes for the extractive industry in Ethiopia have provided basic legal and regulatory frameworks for social accountability. Nonetheless, most of the legal and regulatory

provisions are not sufficient to fully promote and ensure social accountability. The laws have provided discretionary powers to public agencies to decide on citizens rights. Local peoples’ objections to any project to be implemented on their land and territories, or to any proposed displacement by extractive project, or any disagreement with a project owner on the amount of compensation is not binding. This is against the principles of social accountability in the extractive industries.

Effective social accountability depends on the proper functioning of the supply and demand sides of social accountability. Provision of legal and regulatory frameworks by government to govern decisions and actions of implementing government agencies and private sector actors is not enough. There should be demand from citizens in general and the local people in particular where projects are implemented. Citizens however, should be empowered to demand and defend their rights. Citizens’ are empowered when they have sufficient information about their legal rights and are allowed to exercise according to the laws. There is a need for rigorous awareness raising efforts about the legal and regulatory frameworks of the extractive industries so that citizens will be able to clearly understand their legal rights and defend against any intrusion. The reviews of the legal regimes for the extractive industries in Ethiopia show that the laws have identified neither sufficient mechanisms nor actors to keep citizens informed. The media and civil society actors play important roles in creating awareness and keeping citizens informed of their rights. The laws however, are silent in this regard. The laws should be revised to acknowledge and clearly define the roles of such actors.

Important lessons can be drawn from the social accountability initiatives in public service delivery, which include Citizens Reports Cards of PANE and the PBS/ESAP. State, private and civil society actors should join hands to replicate the experience to promote social accountability in the extractive industries. The state, as a legitimate actor, should create an enabling environment for other actors to operate. Civil society actors are at the centre of social accountability agendas in any sector, but their roles depend on the enabling environment and their capacity. In the interest of citizens, confrontation between civil society organizations and the Ethiopian Government should be avoided. The role of the private sector should go beyond participation of individual companies; organized private associations, such as chamber of commerce and sectoral association, should play an active role. Of course, donors’ financial support is so crucial to scale up the initiatives.

The current legal and regulatory frameworks for the extractive industries, however, do not spell out organized public oversight structures and forums beyond government. Hence, this would undermine multi-stakeholder forums for social accountability in the extractive industry unless revisions are made.

Finally, as indicated in the introduction, this research is limited to desk reviews; the application of the laws on the ground and effectiveness of enforcement mechanisms when such laws are violated have not been examined. Hence, it is quite imperative to undertake rigorous empirical study so that the practice of social accountability in the extractive industries can be examined.

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Lessons from the Green Revolution for Agricultural Development in Ethiopia

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Introduction
The Green Revolution (GR) was defined as scientific principles applied to the products of agriculture, with a combination of improved varieties and seeds (via genetic manipulation and selective breeding), chemical fertilizers and pesticides (insecticides and herbicides), irrigation (water) and other modern agronomic packages (6,9). GR was originally started by people like Norman Ernest Borlaug (1914–2009), an American agronomist who was also humanitarian and Nobel laureate (6). Borlaug has been called "the father of the GR who saved billions of lives from starvation and death. His legacy was continued by numerous researchers, development practitioners, policy-makers and farmers who always toil to feed humanity in a sustainable manner. GR was initially began in Mexico in 1943, with assistances of the International Maize and Wheat Improvement Center (CIMMYT) via developing high yielding varieties of wheat that gave twice better yield and also fast growing (6, 8,9). Its comparable results were also achieved with rice at the International Rice Research Institute (IRRI) in the Philippines in the 1960s.

The Ethiopian agriculture has been trying to join especially the second GR in one way or another, and we try to learn from past experiences in order to feed our people and develop our economy without harming our growing bases of environment. Hence, in this piece of work, attempts are made to explore major publications on GR, illustrating their experiences, successes, failures, challenges and lessons for shaping and supporting our research and development works in Ethiopia. By doing so, I believe, optimum balance can be maintained between the traditional and modern agricultural practices to meet our development goals in view of food, energy, climate and environment issues.

Implementation and the associated challenges of GR
As stated above, wheat varieties of the GR were cultivated in India, Pakistan, Turkey and Mexico, while that of rice were grown in Philippines, Taiwan, SriLanka and India and all these varieties have required high fertilizers, adequate water supply, herbicides, fungicides and insecticides (6,9). The main success of GR was an increased yield, and seed yields of wheat and rice increased enormously in the target countries, and a short-term famine crisis was solved and thousands of lives were rescued. However, the following associated problems and challenges became evident, following the implementation of those GR practices (4,6,9):

- Depletion of soil fertility;
- More competitiveness of larger farms;
- More unemployment created consequently;
Increased requirements for foreign currency to buy fertilizers, pesticides, seeds and other inputs;

Subsequently destructive effects on local economies; and,

Created further dependence on the industrialized nations.

As shown above, beyond its yield gains of crops, GR has incurred many costs, such as economical, agri-cultural and social values (4,9). The continuous uses of large amounts of water, fertilisers and chemical pesticides have impoverished soils, leaving them with less fertile and highly polluted conditions. On top of that, local biodiversity was drastically reduced, bringing farmers under the dependence of pesticide manufacturers and outside seed suppliers. The profound cultural and economic changes brought by the GR produced a massive rural exodus that also caused tremendous loss of traditional knowledge and skills (4,8,9). Subsequently, most farmers were soon converted into debts, with many farmers, unable to repay their debts, and moved into taking their own lives, and they were quoted saying "Let the earth open up and swallow us for inheriting sterile soils, water-logged conditions and infested lands with variety of weeds!". Furthermore, GR was observed to have significant negative consequences in India for marginalized groups, women and local environment (4,6,9):

Despite the gains in crop yields, there are still more people at risk of hunger in India than in all of Africa.

The GR did many things, but ending hunger was not one of them.

There has been a dramatic rise in farmer suicides in India where dependence on the relatively costly “package of inputs” model of agriculture has left many farmers in a situation of unbearable debt; and,

The high use of external inputs has caused multiple environmental problems, from pesticide resistance to contaminated wells, diminished water tables and increased soil salinity.

In general, although amazing gains have been achieved in agricultural productivity over the past half-century and saved thousand lives from starvation, major challenges were encountered to reduce the technological gap by adapting improved technologies to the local conditions and needs of low-income food-deficit countries and to specific areas within countries (2,10). This does not mean that scientific research for new technological avenues should not be intensified. Indeed, it should enhance, minimizing the potential risks, being proactive change agents. Biotechnology, in particular, holds much promise for the future, and its application in agriculture is still in its infancy. Its development, however, must be enhanced with full consideration of legal and ethical issues as well as of quality, safety and other associated risks.

According to Rosset (9), the total food available per person actually increased via GR yet hunger in some cases is increasing due to failure to address unequal access to food and food-producing resources (8,9). In this regard, the remarkable difference in China, where the number of hungry people dropped from 406 million to 189 million, has been raising important question whether the GR or the Chinese Revolution were more effective at reducing hunger? Obviously, the latter with its broad-based changes in access to land and applying improved agricultural technologies paved the way for rising living standards. In fact, whether the GR or any other strategy to boost food production will
alleviate hunger depends on the economic, political, and cultural rules that people make (9). These rules determine who benefits as a supplier of the increased production; whose land and crops prosper and for whose profit; and who benefits as a consumer of the increased production; who gets the food and at what price.

Therefore by narrowly focusing on merely increasing production, as the GR did, may not alleviate hunger because it has failed to alter the tightly concentrated distribution of economic power, especially access to land and purchasing power. The study carried out by the World Bank in 1986 concluded the same thing, stating world hunger may not necessarily end as the result of rapid increase in food production (3,4,9). Current hunger can only be alleviated by redistributing purchasing power and resources toward those who are undernourished (9,10). In a nutshell, if the poor don't have the money to buy food, increased production is not going to help them, and other strategies of empowering the poor are the way forward.

According to Tsubota (10), the general conclusion to be drawn from experiences of the past years is that much has been achieved in reducing hunger in the world, but still much more remains to be done if the scourge of hunger is to be eradicated. The necessary technology and sufficient resources exist today. Therefore, if we do not fulfill our commitment to eradicate hunger, we will have no excuse to offer to new generations other than that of ignorance, shortsightedness and selfishness, as noted from previous experiences of GR. There is substantial evidence, however, that raising agricultural productivity is possible and that agricultural growth plays a key role in economic growth, particularly in low-income countries like Ethiopia.

In this line, land and agricultural development policy and strategy of Ethiopia is clear and appreciable, as it is based on needs of Ethiopians especially that of small scale farmers, private sectors and other stakeholders, following the principles of sustainability and green economy development plans. Agricultural development programs are supported through huge deployments of resources for education, research and development, and by facilitating credit services for poor farmers who can't afford to buy fertilizers and other inputs. Moreover, the Government of Ethiopia is committed to rapid growth of agriculture as a means of accelerating the economic transformation and reducing poverty (7). The bottom line needs to be having full knowledge of pros and cons of GR and other incoming technologies for minimizing their associated risks with the involvement of all concerned stakeholders.

**Options in GR and searching for appropriate technologies**

Agricultural productivity of Sub-Saharan African countries, including that of Ethiopia depends on climate; efficient and effective use of the factors of production (farmland, water, and labor); agricultural inputs (fertilizers, irrigation, seeds, and capital equipment); and farmers’ skills (4,6). Hence, meaningful consideration on availability of these factors and involvement of farmers, women and community groups must be assured in all GR initiatives, and implementation processes, if they are to avoid the shortcomings of previous GRs.
Obviously, enormous gains have been achieved in agricultural productivity over the past centuries thanks to progress in technology and expertise of GR. The major challenge now is to reduce the technological gaps by adapting improved technologies to the local conditions and needs of low-income and food-deficit countries as well as to specific areas within countries. As these downsides of the GR became more apparent, a new approach to these problems emerged, as *Appropriate Technology*.

Hence, concerned groups arose in several places in the world, for example, as *Intermediate Technology Development Group* that was formed in 1965 in London, England, to help people in developing countries to acquire appropriate technology for their cultures (3,6,9). This quickly grew into a worldwide movement, and part of the goal was to scale down large technologies to fit rural usage. Subsequently, it was designated as *Intermediate Technology* or *Appropriate Technology*, which means technology on a scale that can be implemented and sustained in the third world with local resources and local knowledge. A quote from *Small is Beautiful* that characterizes the philosophy of appropriate technology is as follows:

- If you want to go to new places, start from where you are.
- If you are poor, start with something cheap.
- If you are uneducated, start with something relatively simple.
- If you live in a poor environment and markets, start with something small.
- If you are unemployed, start using your labor power.

Observing food production advances, while hunger widens, we are now prepared to ask: under what conditions are greater harvests doomed to failure in eliminating hunger? Researchers and development partners (3,8) argue that in the first place, where farmlands are bought and sold like any other commodity and society allows the unlimited accumulation of farmlands by a few, bigger farms may replace family farms and most of the society could eventually suffers. Secondly, where the main producers of foods are small farmers and farm workers, if they lack bargaining power relative to suppliers of farm inputs and food marketers, these producers could have a shrinking share of rewards. Thirdly, where dominant technology destroys the very basis for future production, by degrading the soil and generating pest and weed problems, it becomes increasingly difficult and costly to sustain yields.

Under these three conditions, mountains of additional foods may not eliminate hunger. The alternative is to support and create viable and productive farms, using the principles of agro-ecology (6,10). This model may generate the potential to end rural poverty, feed everyone, and protect the environment and the productivity of the land for future generations. Ecological farms were found as productive and profitable as the chemical ones and they would have little negative impacts on food security and would reduce soil erosion and the depletion of soil fertility, while greatly lessening dependence on external inputs. Therefore, maintaining the balance between these points need to be the way forward.

**Customizing GR to the Ethiopian and local conditions**

The new GR for Africa, including Ethiopia is an initiative intended to boost agricultural productivity, increase incomes and build better lives for their people. It aims to do so by improving farmers’ access
to certain inputs, such as: improved seeds/ varieties, fertilizers and reliable water management
systems, and output elements, like crop storing, processing, transporting, functioning markets,
finance, etc. AGRA (Alliance for a Green Revolution in Africa), which is chaired by former UN
Secretary-General Kofi Annan has been promoting this, and the initiative is intended to focus on eight
interconnected areas of interventions: seeds, soils, water, markets, agricultural education, African
farmer knowledge, supportive agricultural policies, and monitoring and evaluation (1,2,4).

This GR approach has the supports of the New Partnership for Africa’s Development (NEPAD), the
UN (United Nations), FAO (Food and Agricultural Organization), the World Bank, the influential
foundations (Rockefeller and Gates Foundations) as well as agro-business, agro-chemical and
biotechnology companies and projects. In this regard, fostering sustainable agriculture generally in
Africa and particularly in Ethiopia will require significant investments in infrastructure, technical
training (especially for women), creation of regional markets and the use of new technologies (2,5),
and enormous efforts are underway in this regard.

However, various researchers argue that the first GR failed to take place in African countries
including Ethiopia because it did not take into account the wide diversity of African ecosystems and
their farmers (4,6,9). Still some other researchers and development partners advocate for African GR,
as the best way to eradicate extreme poverty and shortage of food via “quick fix” of free or subsidized
inputs for smallholder farmers. Others also believe that agricultural productivity, and ultimately
hunger, can best be addressed with a variety of soil management practices, including legume rotations
and intercropping techniques, composting and other locally available solutions, like integrated soil
fertility management practices (6,8,9). Hence, keeping the right balance among all these scenarios and
ideas need to be our very important tasks.

In the face of recurrent global food crises, institutions of the corporate food regime propose a New
GR coupled with a continuation of neoliberal economic policies (3,8,10). Since these are causes of the
crises, this approach may worsen rather than ending hunger. So, building a counter movement
depends in part on forging strong strategic alliances between agro-ecology and food sovereignty.
Agro-ecologists face important choices between reformist and radical versions of agro-ecology. The
former version attempts to co-opt agro-ecology into the GR, while the latter focuses on agro-ecology
within a politically transformative peasant movement for food sovereignty. Generally, the New GR
for Africa may have the following threats and opportunities for the small farmers:

• Initiatives such as the New GR for Africa (NGRA, AGRA) have helped put agriculture and
  Africa back on the map, which is to be welcomed.
• Any New GR for Africa needs to embrace the differences in climate, soils, water resources,
  peoples and traditions in different parts of the very diverse continent. In other words, it cannot
  rely on ‘cut and paste’ approaches either from Latin America or Asia, or from some regions/
  countries of Africa to others.
• New technologies are an important part of development in agriculture, as in other sectors, but
  are not a panacea for agricultural and/or food production.
• Discussion of the pros and cons of technology in a GR approach necessarily raises issues of ownership, access and rights. The justice/distributive effects of different technologies and food production systems continually need to be taken into account by development actors.

• Development agencies and other stakeholders in African agriculture and food production, need to be pragmatic and flexible rather than ideological in their approaches on new technologies (such as biotechnology), considering different technologies on their merits, and looking to use and promote those elements that work for sustainable human development.

• The meaningful involvement of farmers, women and community groups must be assured in any GR for Africa initiatives generally, if they are to avoid the shortcomings of previous green revolutions.

In short, the integrated technologies and sustainable practices should be combined with patiently cultivated social capital and carefully chosen and adopted new technologies to develop locally appropriate solutions for agricultural and food production. Researchers remind that for any new GR for Africa to succeed, it needs: the meaningful participation of farmers; clear sustainability strategies, rather than a short-term focus on boosting output; and to offer farmers more and better choices. The main principles for appropriate ideas, methods and technologies need to comprise of the following seven factors to minimize the negative effects of GR and address needs of smallholders (3,4).

1. **Low Cost** – many small-scale African farmers have very little additional money to spend on inputs and thus affordable costs are advisable.

2. **Begin with what is locally available** – not depend upon inputs that are manufactured far away, with prices beyond farmers’ control.

3. **Gender is key** – women play a major role in agricultural production and a fundamental role in household food security, and hence their participation is crucial.

4. **Environmentally sustainable** – solutions that acknowledge the diversity of ecosystems and which look to both the short and the long term issues are required in view of climate changes and global warming.

5. **Building on local knowledge** – begins with the knowledge and needs of farmers, generates participation and inclusive dialogue with communities, based on their skill and knowledge on land, soil, water, crops, livestock and other resources’ conditions.

6. **Holistic** – addresses social and economic realities, not only increased crop yields.

7. **Adaptable** – to fit in with changes in situations, for example weather (short-term), climate (long-term), market fluctuations and other dynamic conditions.

**Concluding remarks**

The history of GR has taught us many things, only increasing food production cannot eliminate poverty and hunger. If the very basis of staying competitive in farming is buying expensive inputs, then wealthier farmers will inexorably win out over the poor, who are unlikely to find adequate employment and compensation in case of farm losses and disasters. Poverty and hunger are not merely caused by a shortage of food, and cannot be eliminated by producing more. That is why most people remain skeptical when big companies tell them that only modern technologies, like genetic.
engineering and petro-chemicals will boost crop yields and feed the hungry world. These technologies could cause dubious benefits and already noted with well-documented risks, and thus the second GR might not be better than the first one unless done differently.

Many people do not have access to the food that is already available because of deep and growing inequality. If agriculture could play any role in alleviating hunger, it would only be to the extent that the bias toward wealthier and larger farmers is reversed through pro-poor alternatives, relevant reforms and sustainable agriculture, which may reduce inequality and make small farmers the center of an economically vibrant rural economy, the like Chinese did. Unlike the first GR that focused on increasing only productivity, Africa’s agricultural revolution is focusing on using new technologies to solve local problems in close consultation with the relevant stakeholders. Its humanistic touch is particularly evident in the attention it has been paying for improving local resources via capacitating its scientific and technological knowledge, applying them into local uses. The new GR needs to be driven by three important forces of institutional upgrading, using biotechnology and regional co-operations. Strategies of supporting both smallholders and large-scale farms based on realities of specific areas could help to maximize their benefits, reducing their shortcomings. Fair balance is also required in analyzing and applying the best practices of traditional/indigenous and modern agriculture for alleviating poverty in a sustainable manner.

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Global Digital Revolution: What Can We Use in Health Sciences Research?

By

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Abstract

From the invention of the transistor in 1947, the world has moved from analog mechanical and electronic technology to digital technology. Examples resulting from this third Industrial Revolution or so-called Digital Revolution abound. The most influential example is probably the World Wide Web creating new ways of communication information sharing.

Recent digitalization has also brought various applications to academic education and research. Think, for example, of the educational websites abounding, online learning environments and web 2.0 applications (e.g. forums, wikis, and blogs). Also in research examples are obvious, such as the relatively novel open access journals. In this presentation, I will show some examples of digital supportive tools facilitating both education and research in Health Sciences.

One of the new applications can be found in tools facilitating or improving education. For example, theoretic classes often need illustration, which can be provided by a collection of on-line pictures and movies that students can consult while studying. Furthermore, examinations can be taken in an on-line format, which enhances the reliability of the test as compared to an open-questions exam. It also fastens up correction.

Moreover, digitalization can provide supportive resources for research. As a first example, short video clips describing research protocols in detail will be presented. This can help to standardize procedures and improve the equal execution of research in different countries. Second, I will show how data can be collected easily and uniformly using mobile phones. Finally, it will be illustrated how these tools can be applied in programs to monitor the control of soil-transmitted helminths.
Application of Geosynthetics as Newfound Technology to Old Unpaved Road Problems

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Abstract

Geosynthetics use is widespread in the field of civil engineering from temporary access road applications to permanent geotechnical structures. One particular application that has seen a great deal of use has been as a separating layer between the aggregate base layer and subgrade of low volume roadways. Since geosynthetics may be very stiff, they may provide an additional benefit of reinforcement to the roadway. This paper reports benefits of geosynthetics use in unpaved road in general and review the state of practice in Ethiopia regarding geosynthetic use in paving systems.

Educational Innovation Adoption Models and Successful Educational Changes: Lessons for Educational Change Practices in Ethiopia

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Abstract

Although innovation adoption and successful educational changes are too complex to be governed by a set of prescribed models, there is diverse knowledge base and evidence on how innovations can be adopted and educational changes bring visible impact on school practices. Notwithstanding these provisions, educational change literature across the world has recorded that educational innovations repeatedly fail to bring noticeable changes in actual school practices. This paper attempts to review different innovation adoption models and theoretical and empirical evidence on successful educational change practices and draw lessons for Ethiopian educational practice. Change initiators and experts at the Ministry of Education and teachers in schools were interviewed about the initiation and practice of three educational innovations in Ethiopian education system, namely active learning, continuous professional development, and school improvement. Based on the review and case-based empirical evidence, attempt is made to reflect on Ethiopia educational change/innovation adoption and implementation practices.
Section 2
Parallel Sessions
Parallel Session 1: Organized by College of Business and Economics, Jimma University

An Investigation of higher education student’s Entrepreneurial intention in Ethiopian Universities: Technology and Business fields in focus

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Abstract

Purpose: purpose of this study aims at seeking to understand whether entrepreneurial intentions exist among university students.

Methodology: Survey research method was employed involving total of 210 students from four public Universities found in the Ethiopia. Sample of respondents from selected Universities were drawn by using systematic sampling techniques. The study used both primary and secondary data. Pertaining to data analysis both qualitative and quantitative data analysis techniques mainly descriptive analysis using percentages, tables and graphs were employed. While for inferential statistics like distribution based of determinant factors of entrepreneurial intention of undergraduate students multiple regression analysis was conducted to identify which variables are significant for the model. Regression analysis was used to explain the effect of independent variables on a dependent variable. Additionally mean scores and standard deviations were calculated to identify the most important factors that determines students Entrepreneurial intentions in the selected Universities

Findings: the study proposes five factors contributing to the development entrepreneurial intention in selected universities. Accordingly subjective norms, perceived self efficacy, university environment, perceived educational support and students attitude toward entrepreneurship were significant determinants for entrepreneurial intention in selected public universities.

Practical implications: the finding specifically imply that the universities are advised to give attention to the impact of social influences, identify the way to enhance students confidence to perform entrepreneurial roles and tasks, allow university stakeholder participations such as Supervisor and Lecturer to guides students well and encouraged students to pursue their own ideas. Finally, Ethiopian ministry of education is expected look at university environment to creates environment which can boost entrepreneurial intention of the students

Key words: Entrepreneurial intentions, social influences, perceived educational support. Perceived entrepreneurial self-efficacy

Introduction
1. Background of the study

Entrepreneurship has increasingly evolved to such an extent of not only becoming a career but also a desirable employment option for most people these days. There are more small businesses being created. This has been evidenced by the growing number of people specializing in the conduct of small businesses. On the other hand professional or rather office jobs employment is no longer a fashion as people remains with less chances for getting salaried jobs. We have less prospects of being employed in established organizations. Probably this can be taken as a contributing factor that forces many people to seek opportunities for self employment. This has brought about the heuristic characteristics among many people who behave entrepreneurially.

Still political and academic interest in support of entrepreneurship as a career choice is on the rise probably because of the link between new venture creation and the economic development. In Teixeira & Davey, Moore, Klapper and Leger-Jarniou, 2006 are quoted to show that the continued economic uncertainty, corporate and government downsizing and a declining number of corporate recruiters on the education system have been fostering the appeal of self-employment. But it is also being noted as common for tertiary education to prepare students not only as job seekers but mostly as job creators by becoming self employed (Gelderen, Brand, Praag, Bodewes, Poutsam& Gils 2008).

The main argument asserts of entrepreneurial intention as the pre-condition for undertaking entrepreneurship is that signs that people show to behave in a particular way can help in telling the ways in which people will end up behaving. In the same line, we will find established evidence that someone's intention to act towards something in a certain manner is the most obvious indicator of his actual behavior.

Krueger and other colleagues have discussed entrepreneurial intentions to show that people will not indulge in starting new firms as a reflex, but rather they consider the option much more carefully and quite well in advance (Krueger, Reilly &Carsrud 2000, Scutjens&Stam 2006). The drive comes from within an individual who intend to set up a business venture. Even though researchers still tell that situational as well as individual attributes serve as poor predictors of new business formation, the fact remains that it is an individual who personally envisages and articulate into business ideas. As mentioned above, it is apparently normal in course of living for people to choose entrepreneurship as a career. This makes it is a norm to conjecture that the entrepreneurship process is or can be regarded as a pre-intended behavior in which people eventually delve in. Following this argument the established thrust for entrepreneurial intentions investigation gathers grounds. The same intentions are regarded as best predictors of planned behaviour which in this study is the act of starting a new business. Entrepreneurial intentions as such have accorded merits and academicians strive in efforts so that it is established on the ground of what trigger people to behave entrepreneurially.

Various societal and organizational attributes as well as organizational and individual aspects are accounted to be of essence in deriving entrepreneurs and entrepreneurship in any community (Gelderen, Brand, Praag, Bodewes, and Poutsam&Gils 2008). Dutta&L.Thornhill admit that entrepreneurs form a stock of heterogeneous people with regard to setting or even grow business (Dutta&L.Thornhill 2008). Prior theoretical and empirical research shows diversity of individual
intentions to start business. With this in mind, the following study draws most of its attention on the incorporation of attitudinal factors as well as characteristics of individual students for the assessment of intentions for new venture creation. The researchers believe it is the inherent personal factors of individuals that dispose them to engage in entrepreneurial behaviours. Extant studies on entrepreneurial intentions mostly focus on the impact of business training to determine the level of entrepreneurial skills among students (Gaddam 2008, Gelderen, Brand, Praag, Bodewes, Poutsam& Gils 2008, Souitaris, Zerbinati& Al-Laham 2007, Raab, Stedham&Neuner 2005). The fact remains that those studies have led to deeper understanding of business intentions among students, but the same studies have not exhausted conclusions on general students to incorporate a dynamic aspect for changes in attitude and economic environment keep on revolving. Thus findings on this same subject can contradict with the finding at this yet another moment in time. This study will contribute to this ongoing literature by learning and establishing the entrepreneurial variables among students at the university those took entrepreneurship courses.

We are in an age where the entrepreneurial culture should flourish to the extent that entrepreneurship needs to be regarded as a career that is desirable to every individual. It is within this framework that a proposition is made that students and especially university students, form a significant portion of potential entrepreneurs.

2.1 Literature Review

Factors Affecting Entrepreneurship Development

Most scholars mention educational systems, socio cultural and economic factors as having a strong influence on the development of entrepreneurial behavior of a given society. For instance, Ardichvilia, Cardozo and Ray (2000), identified the Major factors that influence this core process of opportunity recognition and development leading to business formation to be: entrepreneurial alertness; information asymmetry and prior knowledge; social networks; personality traits, including optimism and self-efficacy, and creativity; and type of opportunity itself. Similarly, Haftendorn and Salzano (2003) stresses the socio cultural factor due to the fact that cultures that encourage entrepreneurial behaviour – curiosity, motivation by success, willingness to take risk, identification of opportunity and tolerance of uncertainty; tend to promote entrepreneurship development while those cultures that are against these entrepreneurial behaviours are less likely to develop entrepreneurship.

According to (Desai 1997) the framework of conditions for entrepreneurial development include the availability of financial resources for starting new business ventures, government policies and programs to support new business ventures, the level of education and provision of training for those who wish to be or already are entrepreneurs, access to professional support service and physical infrastructure, internal market openness, as well as cultural and social norms. Rutashobya and Olomi (1999) identified four factors that have the potential to influence entrepreneurial behavior and outcomes. The first factor is the personal characteristics and psychological make-up of the individual. The second factor is the feature of the business where the entrepreneur operates, such as the age, size, form of ownership and others. Third, the strategies, practices and system adopted by the entrepreneur. Fourth, the external environments like economic, political and socio-cultural variables.
Ardichvilia, Cardozo and Ray (2000) tried to build a theory of entrepreneurial opportunity identification based on empirical studies in the area of entrepreneurial opportunity identification and development. According to them “opportunity development” rather than “opportunity recognition,” should be the focus in the effort to develop entrepreneurship. Another scholar, Doss and Mazzarol (2004) believes that triggers and barriers influence the intention, and ultimately the decision, to launch the business (when triggers prevail over barriers) or to give up the idea (when barriers prevail over triggers).

Desai (1999) explores five the most common factors that encourage someone to be an entrepreneur. These are early childhood experiences, the need to gain control over an uncertain world, frustration with traditional organizational careers, challenge and excitement; and the moral encouragement of role models.

Lerner, Brush and Hisrich, (1997), on the other hand, give emphasis to five perspectives and the demographic variables which refer to the individual level variables, which are expected to be differentially associated with performance. These five perspectives are: (a) motivations and goals, (b) entrepreneurial socialization, (c) network affiliation, (d) human capital, and (e) environmental factors.

This study, therefore, will be based on the conceptual framework developed by taking different factors identified to be important in the enterprise formation or entrepreneurship development intention. These factors are demographic characteristics, individual behavior (psychological make-up), human capital enterprise situation and entrepreneurial environment. When it comes to the socio-cultural environment of Ethiopia, Andualem (1997) argues there is a dearth of entrepreneurship in Ethiopia due to the past cultural background in which trading was considered a despised means of earning an income.

This study, therefore, will try to investigate what determine higher education students’ entrepreneurial intention in Ethiopia.

2.2 Intentions

Intentions reflect an individual’s willingness or plans to engage in a particular behavior, and have several antecedents. The ultimate purpose of intentions research is the prediction of behavior. Psychologists have been interested in the study of behavioral intentions for many years (Assagioli, 1973; James, 1950; Lewin, 1935) and over time cognitive psychologists (Fishbein and Ajzen, 1975; Rotter, 1966; Searle, 1983) have developed three divergent theories (Bird 1988); (1) linguistic theory, (2) attribution theory and (3) expectancy theory. The Theory of Planned Behavior is based on the expectancy theory model whereby individuals learn to favour behaviors where they expect favorable outcomes, and to form unfavorable attitudes towards behaviors associated with undesirable outcomes (Ajzen, 1991).

3.2 Sample of the Study and Sampling Method

To select the sample of respondents from the 22 universities, the combination of probability (systematic) and non-probability (judgmental) sampling methods were employed one after the other.
From all universities, four Universities were judgmental selected, because in each University there are similar operation experiences. Accordingly the selected Universities were: Jimma, Addis Ababa, Adama and Haramaya.

From each sampled universities, 33% of colleges were taken as a sample from each sampled universities using judgmental sampling method. To determine sample size the researcher used the following formula

**Sample Size Determination Formula:**

\[ n = \frac{z^2pq}{E^2} = \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2} = 386 \]

- \( n \) = required sample size
- \( z \) = confidence level at 95% (standard value of 1.96)
- \( E \) = margin of error (maximum error tolerable) to within .05
- \( p \) = population proportion at which the sample size is maximum (at \( p=0.5 \) and \( q=0.5 \), \( p*q=0.25 \))
- Where \( q=1-p \) Hence, to identify the necessary information, 386 samples were selected.

### 3.3 Model specification

For regression analysis independent variables include perceived desirability of self-employment, social norms, perceived entrepreneurial self-efficacy, university environment, attitude and perceived educational support. Dependent variable is students’ entrepreneurial intention. Control variables include, participation in entrepreneurship prior activities, activeness in no curricular activities (student union), working besides studying and former work experience.

\[ Y_i = \beta_0 + \beta_{x1} + \beta_{x2} + \beta_{x3} + \beta_{x4} + \beta_{x5} + \varepsilon \]

\( Y_i \) = entrepreneurial intention (dependent variable)
\( \varepsilon \) = Error Term, Where \( x1, x2, x3, x4 \) and \( x5 \) are independent variables.
\( x1 \) = perceived desirability of self-employment
\( x2 \) = social norms (social influences)
\( x3 \) = perceived entrepreneurial self-efficacy
\( x4 \) = university environment,
\( x5 \) = Perceived educational support
\( \beta_0 \) = the estimated value of \( Y \) when \( x1, x2, x3, x4 \) and \( x5 \) are zero
\( \beta_1 \) = the estimated impact of perceived desirability (attitude) of self-employment on entrepreneurial intention
\( \beta_2 \) = the estimated impact of social norms on entrepreneurial intention
\( \beta_3 \) = the estimated impact of perceived entrepreneurial self-efficacy on entrepreneurial intention
\( \beta_4 \) = the estimated impact of university environment on entrepreneurial intention
\( \beta_5 \) = the estimated impact of Perceived educational support on entrepreneurial intention

### 3.4 data analysis
Entrepreneurial Environment factors that affect entrepreneurial intention

<table>
<thead>
<tr>
<th>Entrepreneurial Environment</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to finance</td>
<td>121</td>
<td>59.00</td>
<td>59.00</td>
<td>59.00</td>
</tr>
<tr>
<td>Business support and physical infrastructure</td>
<td>20</td>
<td>9.76</td>
<td>9.76</td>
<td>68.76</td>
</tr>
<tr>
<td>Government regulations</td>
<td>14</td>
<td>6.80</td>
<td>6.80</td>
<td>75.56</td>
</tr>
<tr>
<td>Education, Skills &amp; Training</td>
<td>50</td>
<td>24.40</td>
<td>24.44</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>205</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data 2012

As table 4.12 shows (59%) and 24.44% of respondents believe that access to finance and Education, skills and Training were the major factors that can affect Entrepreneurial intention of the students in selected universities respectively. And the remaining 9.76% and 6.80% of the respondent believe that Business support and physical infrastructure and Government regulations can determine entrepreneurial intention of the students. Therefore from the above we can conclude that access to financial support is leading factors in the support of entrepreneurship and enhancing entrepreneurial intention.

Multiple Regression analysis

For this study, the number of dependent and independent variables were used. To identify the impact of independent variables on dependent the researcher used multiple regression analysis method.

The stepwise regression method is used to determine the combination of possible independent variables that best explains the dependent variables (Argyrous2005)

Dependent variable in this study was students Entrepreneurial intentions. To select dependent variable the researchers calculated correlation coefficient between each independent variable and dependent variables. Accordingly the dependent variable which has high correlation with independent variables was students’ preference to run their own business rather than participating in a lower-risk business after graduation. The independent variables were abbreviated for analysis purpose as follows. SN for Subjective Norms, PS for Perceived Self Efficacy, UE for University Environment, PE for Perceived Educational Support and AT for Attitude.

The table shows the result on the relationship between Subjective Norms, Perceived Self Efficacy, University Environment, Perceived Educational Support and Attitude against students’ preference to run their own business or participating in a lower-risk business after graduation. The result show there is positive relationship between Perceived Self Efficacy and dependent variable but there is negative relationship between University Environment and dependent variable. In other words the contribution of Perceived Self Efficacy to students Entrepreneurial intentions was 17.2% but University Environment was negatively affected students Entrepreneurial intentions by 25%. This could be due to University Environment which discourages students to be entrepreneur.
The result also shows that at significant level of \((p = 0.05)\), there is statically significant difference between Perceived Self Efficacy, University Environment and dependent variables since the significance level for Perceived Self Efficacy and University Environment is less than 0.05. This implies that there is significant difference between the two independent variables and the dependent variable. This means Perceived Self Efficacy and University Environment were the determinant factors of students Entrepreneurial intentions.

### 4.13 Multiple regression analysis for variables predicting students Entrepreneurial intentions after graduation

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>3.470</td>
</tr>
<tr>
<td>SN</td>
<td>.013</td>
<td>.015</td>
</tr>
<tr>
<td>PS</td>
<td>.042</td>
<td>.020</td>
</tr>
<tr>
<td>UE</td>
<td>-.033</td>
<td>.011</td>
</tr>
<tr>
<td>PE</td>
<td>.005</td>
<td>.007</td>
</tr>
<tr>
<td>AT</td>
<td>-.003</td>
<td>.007</td>
</tr>
</tbody>
</table>

\(R^2 = 0.058\) Adj. \(R^2 = 0.035\)

At significant level of \((p = 0.05)\), there is no statically significant difference between Subjective Norms, Perceived Educational Support, Attitude and dependent variable. Since the significance level for these factors were greater than 0.05. From the model in general 5.8% variation in students Entrepreneurial intentions is explained by independent variables which was to weak while the remaining 94.2% influenced by other factors that are not explained in the model.

### Conclusion

The main objective of this study was to identify whether entrepreneurial inclinations exist among university students. It strives to help in establishing if the drive toward entrepreneurship prevails among the same students, regarding to risk-taking propensity of the students, most of respondents 134 (63.8%) replied they have high risk taking propensity. Majority 166(79.0%) of respondents responded that they will not follow their friends and family to do something. That means students in selected Universities posses’ self-efficacy and they can make their own decisions when they have necessary skills to pursue a path of action.

As findings shows that 122(58.1%) of respondents responded that if they decided to do something nothing can stop them from what they want to do and students in selected Universities posses internal locus of control. That means they can control their future events and outcomes as a result of their own actions.

Regarding to desire for independence of respondents. Two questions were asked to evaluate students’ desire for autonomy. Accordingly 137(65.2%) and 145(69.0) of the respondents replied that they will
not wait for notice from someone if they want to do something and they will try what they find out by themselves respectively. Therefore from the above result we can conclude that the majority of the respondents have desire for autonomy which could be the reason for new venture creation.

Concerning to student’s future attitude about continuous employment and fixed salary, 40% of the respondents replied that continuous employment and fixed salary will not satisfy them at all and only portion of the student will be satisfied by continuous employment and fixed salary after graduation.

Findings also revealed that the majority (78.1%) respondents were capable to meet challenges in the job market.

Per findings shown above Subjective norms (social influence) can affect students’ entrepreneurial intentions, specifically believe of people who are important to someone and closest family and partners were significantly determines once intention toward self-employment.

Regarding to Perceived self-efficacy of higher education students in selected universities almost all respondents agreed that perceived self-efficacy factors can affect their entrepreneurial intentions.

Supportive university environment is very important to develop entrepreneurial intentions among university’s students. By providing adequate knowledge and inspiration for entrepreneurship and providing the possibility of choosing an entrepreneurial career might increase among young people but per findings of the study university environment in promoting Entrepreneurial intention in selected universities was low. Particularly per findings Supervisors were not this much helpful and guide well students. In addition different university stakeholders were not actively encouraged students to pursue their own ideas and Lecturer was not this much helpful and guides students well.

Professional education in universities is an efficient way of obtaining necessary knowledge about entrepreneurship and effective education on entrepreneurship can be a factor to push people towards an entrepreneurial career Therefore, academic institutions might have critical roles in the encouragement of young people to choose an entrepreneurial career. As finding shows over all education support variables in selected universities was good but the needs for rearrangement (reversing) the subject was not appreciated by students as weighted mean shows.

Perceptions of desirability of entrepreneurship affected ones personal attitudes, values and feelings, which are a result of their unique social environments (e.g. family, peer groups, educational and professional influences). In other words, an individual needs to first see the act of self-employment as desirable before it is likely self-employment intentions will be formed.

Regarding to the higher education students attitude toward entrepreneurship. The overall weighted mean for student’s attitude toward entrepreneurship was about 3.79. That means almost all respondents have good attitude and desire to be entrepreneur. But students were not interested to face constant change to remain stimulated and didn’t consider earning high income as an indication of success in life as the weighted mean shows.

Entrepreneurial activities may be explained by the influences of the surrounding business environment such as government policy, availability of logistic infrastructure, financial support, and
externalities. In additions physical infrastructure, corporate physical assets, R&D laboratories and intangible (human capital,) Education, Skills and training opportunities can foster entrepreneurial intention.

Regarding to entrepreneurial environment 59% of respondents believe that access to finance and was the major factors that can affect Entrepreneurial intention of the students in selected universities

Concerning to the impact of independent variables on dependent variables multiple regression analysis shows that Perceived Self Efficacy and University Environment were the determinant factors that can significantly affect students Entrepreneurial intentions in selected universities.

Reference


Women’s Involvement as an Effective Management Tool in Decision-making in Oromia Region’s Public Organizations

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Abstract

Women are the fuel that runs the engine of the organization and it is believed that their low involvement in the decision-making process creates tensions between management and staff. Therefore, the purpose of this study was aimed to determine the impact of women low involvement as a management tool in decision-making and its implementation in Oromia region public organizations by determining the causes of low women involvement in decision-making and the consequences of such action on implementation of decisions. In the study, cross-sectional, descriptive and inferential designs were used.

As findings of the study; eventhough, the involvement of women in decision-making are increasing, until know there is low acceptability of their decision-making process by all communities. As per the chi-square test made (p<0.001, Phi= .207), there is statistically significant difference between men and women believe as the involvement of women in decision-making lead acceptable by all people. The serious consequences of low women involvement are, job dissatisfaction, low productivity and employee turnover and reduce various benefits of organizations.

Implications: Hence, in order to reduce such problem the governemnt and every organization should consider specifically the above factors.

Key concepts: Women involvement, decision making, causes of low women involvement, consequences of low women involvement

1. Introduction

The trends of women’s participation in world are showing a positive even better advancement of women in different sectors. During 1996-2000, the increase for male worker was only 1.2 percent whereas the increase for female worker was 14.4 percent which shows that the rate of increase of the female workforce is higher than that of the male workforce of Centre for Policy Dialogue (CPD, 2000). During the past decade, increasing research attention has been paid to women participation and challenges faced in their workplace. Women can prove to be a valuable resource and an asset for the country with the abilities like handling multiple tasks simultaneously, which might not be that easy for male employee (Standing, 2004). Though, there are some cultural and religious challenges addressed by the researcher which hinder the participation of women in decision-making, organization
is one of the critical factors which can play important role for ensuring women’s participation in organization (Chen et. al 2008).

Women basically work more hours per day than men irrespective of income class which often leave heavy work burden on them and have a definite impact on women's mental health, and block their prospect in line of work (Ogiwara, Tsuda, Akiyama and Sakai, 2008). Workplace harassment of women is increasingly becoming a common phenomenon. Women in the workforce, especially those in professional and management positions, are doubly burdened by social traditions that expect workers to meet masculine standards at the office while maintaining their feminine role of nurturer at home. A survey conducted by Democracy Watch on harassment of middle class women in offices and found that harassment rate is very high among educated middle class women.

According to International Labor Organization (ILO s) the Discrimination (Employment and Occupation) Convention, 2002 (No. 111), all human beings, irrespective of race or sex, have the right to pursue both their material well-being and their spiritual development in conditions of freedom and dignity, of economic security and equal opportunity. Despite the recognition and governmental and non-governmental efforts, comparing to men (23.4%), only 6.7% women were occupying managerial positions (Labour force Survey, 05-06) which is far beyond the satisfaction. As a result, women have less control over income and assets, have a smaller share of opportunities for human development, have a subordinate social position and poorly represented in policy and decision- making. (Huq and Parveen, 2006).

Furthermore, where in the agriculture and production sector the participation of women was 72.1% in 2000 and 84.3% in 2006 while in administrative, managerial and technical sector the participation of women is very low (4.9% in 2000 and 4.6% in 2006) which is not satisfactory. According to Gender Empowerment Measure (GEM) of Human Development Index, Bangladesh ranks 81 out of 93 countries in economic and political gender inequalities between men and women (HDR, 2008). The participation of women in the policy formulation and decision-making level is still very low. In fact, women’s active participation in decision-making is not only important for ensuring equality, but also for establishing their right addressing their problem and challenges they faced in their workplace as well as social life which help as effective management tool in decision-making. In the same way, active involvement of the women staff body in decision making could be detrimental to every organization’s welfare and the growth, sustainability and survival of the organizations.

In similar fashion, women in Africa experience greater challenges in accessing decent jobs than men. Women’s share of employment in the formal sector is still lower relative to men and their pay is on average lower than men’s pay for the same work. The difference between female and male employment-to-population ratios was 22.7 percentage points in 2007 as well as in 1997 (ILO, 2008 cited in the six African Development Forum (ADFVI, 2008).

Additionally, as past research finding shows that eventhough the local government’s (Ethiopia) effort in incorporating gender perspective into economic empowerment programmes is a relative improvement is exhibited, until quite low (Muluneh, 2010). Furthermore, as per preliminary investigation made by the student researcher, although in Ethiopian public organization over the last
decades women’s employment has increased, compared to men still there is low women’s participation in decision making (Chalchissa, 2011). Besides this, women’s participation in decision-making is not satisfactory which directly affect effectiveness of management.

However, as organizations are grappling with the problem of involvement of women in effective decision-making, against this background, the topic under consideration was seek to research and identify the main causes and effects of low or nonparticipation of women in effective decision-making and recommend appropriate measures to address them. Hence, this research was located to investigate the women’s involvement as an effective management tool in decision making in Oromia region’s public organizations.

The broad objective of this research was to study women’s involvement as an effective management tool in decision-making in selected public organizations in Oromia region.

Specifically:

- To determine the consequences of low women involvement in decision-making on the implementation of management decisions.
- To identify ways of involving women in decision-making.
- To assess the organizational benefits from women involvement in decision-making.

2. Literature Review

2.1 Women involvement

The term women involvement is often used interchangeably with women participation, but employee involvement practices tend to take place at individual or workgroup level, rather than at higher decision making levels (Greenberg, 1986 cited in Theodosia, 2010). Women involvement is a process for empowering women to participate in managerial decision-making and improvement activities appropriate to their levels in the organization. Women involvement has been conceptualized as the process of developing ‘a feeling of psychological ownership among organizational members’ and has been implemented via the participation of women in information processing, decision-making and/or problem solving (Kearney, 1997 cited in Chalchissa, 2011).

One of the greatest underlying factors in the success or failure of any organization is the power of its people and how well that power is focused towards meeting organizational objectives. Organizations that can tap the strengths of their women as men will be stronger and more competitive that those that cannot (Apostolou, 2002 cited in Maksuda, 2010). Numerous studies, all point to the fact that employee involvement does influence organizational effectiveness; some of which includes lower absenteeism, (Marks et al,1986), enhanced work attitudes (steel and Lloyd, 1988), higher individual work performance (Bush and Spangler, 1990), lower employee turnover and increased returns on equity (Vandenberg et at, 1999), and improved organizational learning culture (Thompson, 2002, cited in Maksuda, 2010).
Women involvement is also expected to lead to increased product or service quality, greater innovation, stronger woman motivation, lower costs but a higher speed of production, and lower employee absenteeism and turnover (Lawler, 1996 cited in Chalchissa, 2011).

2.2 Benefits of Women Involvement

As literature on women involvement accumulated, a wide range of benefits was elaborated, and organizations were encouraged to adopt a variety of participation strategies, and to cultivate a culture of participation (Denison 1990). As per Markowitz (1996) also asserted that giving women decision-making power boosts their morale and commitment to the organization, which aids productivity; every body benefits: businesses accrue higher profits and stability because they are more secure in their industry niche and workers are more fulfilled and attached to the companies because they have a voice in decision-making. A summary of expected benefits as listed by Lawler (1990) are: Improved, more innovative and efficient work methods and procedures (less resistance to new methods may result, and the problem-solving process may produce innovations); better communication between management and workers and across work units.

It could lead to attraction and retention of women employees (improvement results from increased satisfaction and involvement); reduced tardiness, turnover, and absenteeism; greater staffing flexibility (increased flexibility results from cross-training and teamwork); increased service and product quality (higher motivation and better methods increase the rate of output).

3. Research Methodology

Research Design: The research was conducted in Oromia region from June, 2011 to October, 2012. The cross-sectional survey design was used in the study. Population in this research is the whole zones (18 zones) of Oromia region. From the given zones, three were taken as a representative samples.

Sampling Method and Sampling size: To select the sample of respondents probability sampling methods, stratified random sampling technique.

Simple random was used to select three zones as samples representation of population (18 zones) and to select respondents from each stratum. Stratified random was used to categorize the respondents into two (men and women) based on gender. Eventhough, the women employees are less than men in number in different organizations, the researchers had taken for both stratum equal number i.e from total sample size of 386 (50% each i.e 50%×386=193 females and 193 males). All respondents from both strataums were chosen using simple random sampling method.

The sources of data used were both primary and secondary data.

Primary data: For the purposes of this research, survey, interview and focus group discussion were used to gather the necessary information.

Secondary data: These include all types of published and unpublished, public or private documents and other such types of information. Such as books, documents, Journals, articles, different past researches, reports of the company and online material (Internets).
well-structured questionnaire for survey, individual interview and focus group discussion were used as tools of data collections.

Data Analysis Procedure: Both descriptive and inferential statistical analyses were employed. The processed data was analyzed by using Excel and statistical package for social sciences (SPSS) Version 16. Analysis of descriptive statistic and chi-square conducted to investigate statistically significant difference between men and women’s responses.

4. Result and discussion

This part covers the analysis and the interpretation of the various data collected through the use of questionnaires, focus group discussion and interviews.

Table: 4.1 Type of position of Respondents

<table>
<thead>
<tr>
<th>Position in your organization</th>
<th>sex</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>male</td>
<td>female</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>42</td>
<td>26</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>25.9%</td>
<td>16.9%</td>
<td>21.5%</td>
<td></td>
</tr>
<tr>
<td>non-manager</td>
<td>120</td>
<td>128</td>
<td>248</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>74.1%</td>
<td>83.1%</td>
<td>78.5%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>162</td>
<td>154</td>
<td>316</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

As the above table 4.5 implies, 25.9% of male respondents hold Position in different organizations and 74.1% did not hold while 16.9% of females respondents hold Position in different organizations and 78.5% of them did not hold. From this it is possible to conclude that even though the majority of position holders in Oromian region public organizations are men, the number of women manager also become increased.

Table: 4.2 Employees involvement in decision-making

<table>
<thead>
<tr>
<th>Are you involved in decision making in your organization?</th>
<th>sex</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>male</td>
<td>female</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>120</td>
<td>86</td>
<td>206</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>74.1%</td>
<td>55.1%</td>
<td>64.8%</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>42</td>
<td>68</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>25.9%</td>
<td>43.6%</td>
<td>34.6%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>162</td>
<td>156</td>
<td>318</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

X²= 13.649, df=1, N=316, P=.001 and Phi=.207

As per the above table, 55.1% of women employees were involved in decision-making and 43.6% of them did not while 74.1% of men employees were involved in decision-making and 25.9% of them were not involved. This implies that mostly men employees were involved in decision-making. Furthermore, as per chi-square test made (p<0.05, Phi=.207) shows, there is statistically significant difference between men and women involvement in decision-making. To cross-check the case, focus group discussion was made with employees and most of them replied that there is low acceptability of women’s involvements in decision-making.
Table: 4.3 Consequences of low women involvement

<table>
<thead>
<tr>
<th>Consequences</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>job dissatisfaction</td>
<td>196</td>
<td>120</td>
</tr>
<tr>
<td>low productivity</td>
<td>100</td>
<td>216</td>
</tr>
<tr>
<td>tardiness</td>
<td>86</td>
<td>230</td>
</tr>
<tr>
<td>labor unrest</td>
<td>80</td>
<td>236</td>
</tr>
<tr>
<td>absenteeism</td>
<td>68</td>
<td>248</td>
</tr>
<tr>
<td>employee turnover</td>
<td>58</td>
<td>258</td>
</tr>
</tbody>
</table>

As indicated in table 4.3, 28.8% of respondents replied as the impact of low women involvement in decision-making would lead to labor unrest, 70.5% replied it would lead to job dissatisfaction, 36.0% replied it would lead to low productivity and 31.2 % replied it would lead to tardiness while 24.5 % and 20.9% replied it would lead to employee turnover and absenteeism respectively. From this it is possible to conclude that mostly the low women involvement in decision-making brings job dissatisfaction of employees and low productivity of the organizations.

When women are not involved, there is no complete sense of appreciation of issues and accountability which will in the end make the organization suffer when goals and set objectives are not met. Respondents also said non involvement restricts and restrains them from taking decisions that would lead to effective and efficient service delivery. Frustrations set in making it difficult for progress in innovation and value added activities.

As per the table 79.5% of respondents replied as women empowered with the authority fulfilled their role within the organization while 20.5% replied as they do not. There is statistically weak significant difference between men and women (P=.047, Phi=.111) responses’. It is consistence with Apostolou (2000) that found as women involvement and empowerment is a long term commitment, a new way of doing business, a fundamental change in culture. As well as women who have been trained, empowered and recognized for their achievements see their jobs and their companies from a different perspective.

The women were of the view that involvement through the communication of information about the organization is very important as indicated by 66.3% of respondents. 17.2% responded that it is a somehow important as decision making tool and 6.1% of the respondents responded as extremely important and 6.1% brought up the suggestion that communication of information about the organization might be important.

The study also revealed that self-managed teams, another decision making tool would be welcomes by women employees as a way of involvement. 52.8% of respondents replied as it is very important as a decision-making tool whilst 17.2% replied as it is extremely important. 12.9% of respondents suggested that involvement through self-managed teams somehow important whilst 15.3% were might be important.
Respondents exhibited different views when they were asked to indicated their opinion whether involvement in product development (increases productivity of their organizations) is important in decision-making. 62% replies it is very important whilst 16.6% replied as it is extremely important. They attributed it to the fact that women will be able to use that avenue to air their opinions and that of customers to meet their expectation and delight. 5.5% of respondents indicated that it might be important, 9.8% responded as it is somehow important and another 6% did not respond.

62% of respondents were of the view that having feedback on actions taken is very important. However, 17.8% were of the view that having feedback on actions taken is very important and 9.8% responded as it is somehow important and another 5.5% of respondents replied as having feedback on actions taken were might be important whilst 4.9% were indifferent.

Responding to what kind of benefits would organizations enjoy from women involvement in decision making, 66.7% of respondents indicated that commitment to organizational goals is one of the benefits an organization achieves. 33 percent of respondents were indifferent. Increased productivity is attainable was the response of 60.9% of respondents whilst 39.1% were indifferent.

Improved performance and job satisfaction were also mentioned as benefits. 62.2% of respondents indicated that improved performance and 67.9% were for job satisfaction. 37.8% and 32.1% respectively did not respond.

Table: 4.5 Organizational Benefits from Women Involvement In decision making

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency (No of response)</th>
<th>Percentage (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>low turnover</td>
<td>162</td>
<td>51.9</td>
<td>100</td>
</tr>
<tr>
<td>increased productivity</td>
<td>190</td>
<td>60.9</td>
<td>100</td>
</tr>
<tr>
<td>commitment to organizational goals</td>
<td>208</td>
<td>66.7</td>
<td>100</td>
</tr>
<tr>
<td>improved performance</td>
<td>194</td>
<td>62.2</td>
<td>100</td>
</tr>
<tr>
<td>job satisfaction</td>
<td>212</td>
<td>67.9</td>
<td>100</td>
</tr>
<tr>
<td>Better communication</td>
<td>198</td>
<td>63.5</td>
<td>100</td>
</tr>
</tbody>
</table>

According to the data collected, when women are satisfied on the job it automatically translates into improved performance because the feeling of satisfaction creates room for the employee to work very well even under extreme conditions to achieve a target without grumbling.
In response to better communication as a benefit of employee involvement in decision making, 63.5% of respondents indicated that it was beneficial whilst 36.5% were not in favour. As the difference margin between the two opinions shows, better communication leads to efficiency because women employees can equally make informed decisions in their daily operations.

However, when employees were asked whether low turnover is one of the benefits an organization will gain when women are involved in decision making, 51.9% selected it whilst 48.1% did not.

5.1 Conclusion

The involvement of women in decision-making and its implementation is very crucial to the fortune of any organization as it is through the successful implementation of policy decisions that the goals and objectives of an organization can be achieved to improve organizational performance and the implementation of the short or long plans. Even though, women were increasingly involved in decision-making, until now majority of people did not believe that as an involvement of women in the decision-making process it would lead acceptance of their decisions by the community. It is because of the low acceptability of women’s involvements in decision-making. The employees felt that the consequences of low women involvement are serious for any organization as it could lead to low productivity, job dissatisfaction and even employee turnover though this may not be on the high side but some very good employees can be lost as a result of this. When this happens, an organization tends to spend a lot of money on recruitment and training. Even though, there is some statistically significant difference between men and women responses’ women empowered with the authority can fulfill their role within the organization.

Methods of getting women involved are many and varied and these include suggestion systems such as communication of information about the organization, self-managed teams, involving of women in product development is one tool of participating women, view that having feedback on actions taken is very important tool of participating women in decision making. Organization can encourages involvement of women in decision making through different strategies. Majority of organizations have encouraged women’s participation by different systems. When women are satisfied on the job it automatically translates into improved performance because the feeling of satisfaction creates room for the employee to work very well even under extreme conditions to achieve a target without grumbling. As the difference margin between the two opinions shows, better communication leads to efficiency because women employees can equally make informed decisions in their daily operations.

5.2 Recommendation

Based on the finding of the study the following recommendations were forwarded to different organizations:

When women are not involved, even though, job dissatisfaction is the most effect, there is low productivity and even employee turnover which will in the end make the organization suffer when goals and set objectives are not met. As well as low involvement of women restricts and restrains
them from taking decisions that would lead to effective and efficient service delivery. Hence, every organization should involve women equally in decision-making with males.

Majority of organizations have encouraged women’s participation by different systems. In order to further maximize the participation of women in decision-making, further exploration using rigorous standard setting and item analysis procedures should be carried out. Production of separate reports for different methods will help to maximize the benefits of the assessment.

A wide range of benefits of participation of women was elaborated, and organizations were encouraged to adopt a variety of participation strategies. Hence, in order to earn such benefits every organization should more encourage their participation.

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Relationship between Leadership Styles of Nurses’ Managers and Nurses’ Job Satisfaction in Jimma University Specialized Hospital*

By

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Abstract

Background: Leadership style of nurse managers play determinant role in nurses’ job satisfaction. However, there is limited amount of literatures in the areas related to nurses’ manager leadership styles. The objective of this research was to investigate the Relationship between Leadership Styles of Nurse Managers and Nurses Job Satisfaction in Jimma University Specialized Hospital.

Method: The study was conducted from January to June 2012 at Jimma University Specialized Hospital and used non-experimental correlation design. All nurses who are full time, non supervisory, and more than one years working experiences in nursing profession were participated in the study. The Multifactor Leadership Questionnaire and Minnesota Satisfaction Questionnaire were used to collect the data. Data were entered and analyzed using SPSS version16.0 statistical software. The results were analyzed in terms of descriptive statistics followed by inferential statistics on the variables. Significance considered when p<0.05.

Results: A total 175 questionnaires were returned from 186 questionnaires distributed to respondents. The result indicated that nurses can distinguish transformational leadership style over transactional leadership style and had moderate-level intrinsic (M=2.72, SD=0.71) but low level of extrinsic job satisfaction (M=1.83, SD=0.68). Furthermore, from transactional leadership only contingent reward statically significant and correlate with extrinsic (B=0.45, p<0.01) and intrinsic job satisfaction (B=0.32, p<0.05) while all five dimension of transformational leadership style statistically significant and correlate with both intrinsic and extrinsic job satisfaction.

Conclusion: Nurses were satisfied towered the transformational leadership than transactional leadership style. Therefore, nurses’ managers should use transformational leadership style in order to increase nurses’ job satisfaction.

KEYWORDS: Leadership, Nurses, Job satisfaction, Jimma University Specialized Hospital
Demographic Changes and Economic Development: Application of the Vector Error Correction Model (VECM) to the Case of Ethiopia

By
Hassen Abda Wako

Abstract
Ethiopia is one of the countries with high fertility, rapidly growing and largely young population. At the same time, it is among countries with weak and poorly focused population policy. In light of this, this study intended to assess the causation between demographic factors and economic development in Ethiopia. To this end, it applied vector-error-correction model (VECM) to data on economic, demographic and other variables obtained from secondary sources, accompanied by descriptive analysis of the relationship of population with HDI, agricultural landholdings and forestland. VECM results indicated robust and negative long run relationship between per capita income and population growth and a positive one between the former and growth of workers – with bidirectional causality in both cases. That is, rises in per capita income reduce the growth of (dependent) population and enhance that of workers, and vice versa. Conversely, slower growth of population or faster growth of workers raises per capita income. Short run relationships turned out to be weak and non-robust to alternative model specifications. The descriptive analysis signified inverse associations of population growth with landholding, forest coverage and HDI score. These findings point to a need for meaningful efforts to incorporate population matters into the policy arena.

Key words: Population growth, economic development, Ethiopia, population pressure.
Parallel Session 2: Organized by College of Natural Sciences, Jimma University

In vitro Propagation of Endod var. E-44 (Phytolacca dodecandra L'Herit)

By
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Abstract

A micopropagation protocol was successfully developed for Phytolacca dodecandra variety (E-44) that enables high multiplication for large scale propagation, economic and medicinal uses. Both nodal and shoot tip explants obtained from mother stockplant under greenhouse conditions were used for consecutive micropropagation phases; namely sterilization, shoot induction, multiplication, rooting and acclimatization. Explants were sterilized using four different concentrations of sodium hypochlorite (NaOCl) (1.3, 1.56, 2.08 and 2.6 %) and each concentration tested against five different exposure time (5, 7, 10, 12 and 15 minutes). Healthy and clean explants were transferred onto MS medium supplemented with different concentrations of BAP (2.22, 4.44, 8.88, 22.2 μM) for culture initiation. Highly induced shoots from both explants were subcultured onto fresh MS media supplemented with different concentrations of BAP (2.22, 4.44, 6.66, 8.8 μM) and kinetin (2.33, 4.65, 6.98, 9.3 μM) alone and in combination for shoot multiplication. Shoots with minimum length of 2 cm were cultured on half-strength rooting medium supplemented with IAA (1.45, 2.85, 5.71, 8.57 μM), IBA (1.23, 2.45, 4.9, 7.35 μM), NAA (1.34, 2.68, 5.37, 8.06 μM) to induce roots. Sodium hypochlorite at a concentration of 1.56 % exposure of 12 minutes gave high percentages (81.67 %) of survived explants for nodal and 1.3 % concentration of NaOCl exposure of 10 minutes (73 %) for shoot tip was found be optimum treatment to obtain contamination free explants and lesser plant tissue death. Lower concentration and shorter time of exposure resulted less percent of clean explants due to microbial contamination, and higher concentration with longer exposure time resulted less percent of survived explants due to plant tissue death. Six-Benzylaminopurine (2.22 μM) was found to be an optimum concentration for shoot induction, yielding 80 % for nodal and 70 % for shoot tip explants. The combination of BAP (2.22 μM) with Kinetin (2.33 μM) was obtained as optimum concentration yielding 13.4 and 11.03 shoots per explants for nodal and shoot tip, respectively for shoot multiplication. Half - strength MS medium with IBA (2.45 μM) and IAA (2.85 μM) yielded
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more than 90 % shoot induction with optimum root number and length. For acclimatization, sterilized soil mix of 2:1:1 (top forest soil: coffee husk: sand) was optimized yielding 80 % on transparent polyethylene plastic box. Compact callus and root induction not required at different stages were the major problems inhibiting shoot and root proliferation that may indicate the endogenous auxin concentration of the plant. Such developed protocol is a tool for further genetic improvement studies, mass propagation and excess saponin extraction.

Existence of Common Fixed Points for a Pair of Generalized Weakly Contractive Maps

By
Alemayehu Geremew (PhD.)

Abstract
We discuss the existence of point of coincidence for a pair of selfmaps \( (f, T) \) of a metric space \( (X, d) \) in which \( T \) is a generalized weakly contractive map with respect to \( f \), through the convergence of the Picard iteration. Also, we deduce the existence of common fixed points for occasionally weakly compatible maps.

Further, we discuss the existence of common fixed points for a pair of occasionally weakly compatible selfmaps satisfying generalized weakly contractive condition and property (E.A).

Evaluation of Antibacterial Activities of Compounds Isolated from Sida rhombifolia Linn (Malvaceae)

By
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\(^b\)Department of Biology, Jimma University, Jimma, Ethiopia

Abstract
The main objective of this study was to isolate compounds from roots of Sida rhombifolia L., and subsequently evaluate their antibacterial activities. Crude gradient extracts were obtained from three solvents (petroleum ether, chloroform and methanol) with increasing solvent polarity using cold maceration technique. The in vitro antibacterial activity evaluation of gradient extracts and isolated compounds was done on four different pathogenic bacterial strains (Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa and Salmonella typhimurium) using agar disc diffusion technique. The results showed that antibacterial activities were comparable to each other. But their activities were relatively weaker as compared to that of the reference compound (ciprofloxacin). Among the three crude extracts, the chloroform extract was subjected to column chromatographic separation that led to isolation of SRL-1, SRL-2 and SRL-3. The chemical structures of the compounds were found to be \( n \)-hexacos-11-enoic acid, stigmasterol and \( \beta \)-sitosterol, respectively, based on physical properties and spectroscopic (IR
and NMR) data as well as literature reports. The observed antibacterial activities of the crude extracts and the isolated compounds could justify the traditional use of the plant for the treatment of different bacterial infections. Thus, further test is recommended on large number of bacterial strains to decide the potentials of the compounds as candidates in development of antibacterial drugs.

**Ideals in Semi-Browerian Algebras**

By

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**Abstract.** In this paper we introduce the concept of ideals in a Semi-Browerian algebra and study its properties. Further we introduce the notion of equivalence and congruence relation in a Semi-Browerian algebra and established some properties regarding these concepts.

**Management of Post-harvest Spoilage Fungi by Some Spice Extracts**

By

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*Department of Biology, College of Natural Science, Jimma University, Jimma-378, Ethiopia*

**Abstract**

The experiment was carried out to evaluate the antifungal potential of aqueous and ethanolic extracts of four spices (*Allium sativum, Zingiber officinale, Cinnamomum zeylanicum* and *Capsicum annuum*) against the important post-harvest spoilage fungi isolated from diseased fruits. In total, 276 isolates of post-harvest spoilage fungi were isolated from four different fruit types (*Persea americana, Musa acuminata, Citrus sinensis* and *Lycopersicom esculentum*), out of which 183 isolates were identified while 93 isolates were remain unidentified. The most dominant post-harvest spoilage fungus was *Rhizopus* sp., (26.45%), followed by *Penicillium* sp., (19.93%), *Aspergillus* sp., (10.86%) and *Fusarium* sp., (9.06%). Results of disc diffusion assay showed that ethanolic extract of *C. zeylanicum* was found to be most effective against *Penicillium* sp., followed by aqueous extracts of *A. sativum*. The ethanolic extract of *C. zeylanicum* in agar amended assay and minimal inhibitory concentrations was found to be very efficient (100% inhibition) against all the tested fungi. Result of *in vivo* study showed that pre-inoculated *C. zeylanicum* ethanolic extract and *A. sativum* aqueous extract were found effective in reducing the disease severity (6.24-13.67%) and (7.91-13.15%) against the *Penicillium, Rhizopus, Aspergillus* and *Fusarium* spp. Therefore, use of *C. zeylanicum* and *A. sativum* extracts could be potential one against tested post-harvest spoilage fungi.

**Key words:** Aqueous extract, diseased fruits, disease severity, ethanolic extract, inhibition.
Learning Situations and Academic Achievement of Mathematics Students at Jimma University, 2004 E. C.

By
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Abstract
Science and technology are currently becoming a very dominant means of development worldwide in which mathematics is its fundamental tool. This study tried to investigate the learning situations of mathematics students in Jimma University (JU) in 2004 E. C. academic year based on a cross-sectional survey using all the three batches of 255 students as respondents.

The finding shows that lecturing is still the dominant teaching method teachers frequently using and students enjoying most in the current mathematics classes of JU. Tutorial sessions of mathematics classes are wrongly used for lecturing and assessments which was meant for active exercises and feedback exchanges. On the other hand, continuous assessment is found habitual in most learning situations in the department. Many of the mathematics students joined the department by their interest and expressed their positive feelings towards the subject.

In general in this study, it is recommended to design ways of conducting intervention to improve the teaching learning situations at department level since it is the concern of everybody there.

Important terms: learning situation, academic achievement, active learning, tutorial session, continuous assessment

Phytochemical Investigation and In Vitro Antibacterial Evaluation of Root wood and Root bark Extracts of Moringa stenopetala

By
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Abstract
The main objective of this study was to carry out phytochemical investigation of root wood and root bark extracts of Moringa stenopetala and evaluating its antibacterial activity. The plant material was collected from in the garden of Arbaminch teachers training college and Arbaminch university southern Ethiopia. The dried and powdered plant material was subjected to gradient extraction with solvent system (petroleum ether, chloroform, acetone, methanol and distilled water) using soaking technique. Antibacterial evaluation of crude extracts of root wood and root bark of plant was screened
using in vitro method against four standard bacterial strains. Gram positive (Staphylococcus aureus),
Gram negative (Escherichia coli), Gram negative (Pseudomonas aeruginosa) and Gram negative
(Salmonella typhimurium). The air dried root wood acetone extract were found to be active against
strains. The crude extract of plant part showing promising antibacterial activity was subjected to
extraction in bulk and isolation of pure compounds. Six compounds were isolated from root wood of
plant species. The compounds were labeled MS-1, MS-2, MS-3, MS-4, MS-5 and MS-6. Four of the
isolated compound (MS-1, MS-2, MS-3 and MS-4) was then subjected to instrumental analysis, such
as Infra red spectrophotometer (IR), $^1$H-NMR, $^{13}$C-NMR and DEPT-135 experiments for elucidation
of their structure. After comparing spectral data of compounds isolated with reported data were
identified as cholesterol, palmitic acid, n-octacosane and oleic acid. The bio-activity in vitro assay
was done using disk diffusion method on isolates of the compounds. The inhibitory activity of the
crude extracts and pure isolates against the strains were found to be not comparable to each other and
reference drug (ciprofloxacin 5μg) was used. But the present study was successful in identifying
candidate plant with different antimicrobial activity which could be further exploited for isolation and
characterization of the novel phytochemicals in the treatment of various diseases especially in light of
the emergency of drug-resistant microorganisms and the need to produce more effective antimicrobial
agent.

**Contribution to the Knowledge on Ethnotoxic Plants of**

**Southern Western Ghats, Kerala, India**

By

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Abstract

Ethnotoxic plants are those plants used by various ethnic groups of different parts of the world for the
purpose of stupefying fishes and repelling harmful organisms. It is the application of traditional
knowledge by indigenous communities on toxic effect of plants which developed by trial and error
methods and continuing to practice through thousands of years. The major classes of compounds
acting as toxins are rotenones, saponins and triterpenes. The insect repellant activity is due to presence
of aromatic compounds and essential oils. A study was conducted to document the knowledge on
Ethnotoxic plants of the selected tribes of Southern Western Ghats India among eight selected tribal
groups viz. Eravallans, Irulars, Kadars, Kurumbars, Malamalasars, Mudugars, Malasars, and
Muthuvans revealed that, they have sound knowledge on the toxicity of plants in and around them.
During the study, 34 plants belonging to 32 genera 24 families were recorded with toxic effect on
various animals. The genera like *Acacia* and *Capsicum* represented by two species and other genera of toxic plants represented by one species each. The dominant families of toxic plants are Fabaceae, Rubiaceae, Solanaceae, represented by three species each followed by Arecaceae, Menispermaceae, Poaceae and Sapindaceae (represented by two species each). Out of the 34 plants recorded 16 plants are exclusively acting as fish stupefying agent, 10 plants are used against repelling insect, eight plants are used for repelling leech. Plants such as *Dillinia pentagyna* and *Strychnos nuxvomica* are useful for the purposes of fish stupefaction and repelling leeches. Among the eight tribal groups studied, Mudugars possess Ethnotoxic knowledge on 23 plants followed by Kurumbars, Malsars and Malamalasars. The paper discusses about the important class of toxic compounds isolated from the ethnotoxic plants studied and significance of such toxic plants for developing eco-friendly herbal products as insecticides, piscicides and other repellents against harmful organisms.
Abstract
Child labor is one of the most atrocious forms of human rights violations that cannot be eradicated without ensuring compulsory primary education. The purpose of this study was to explore the implications of child labor in addressing education for all children emphasizing on those engaged in lottery selling and shoe shining activities. It especially stresses on the causes of child labor, practices and challenges in the elimination process and its implications on education for all. To this end, the qualitative case study approach was employed to explore the issue in-depth. Data collection was undertaken through interviews, document analysis and observation from purposely selected 10 child laborers (aged 8 to 14) engaged in selling lottery tickets, and shoe shining activities. Moreover, some key informants from education bureau, social and labor affairs, and females, youth and child affairs were included in the study using stratified purposive sampling. The poverty, family size, full-day schooling and rural-urban migration were investigated to be the major causes of child labor. Lack of commitment in implementing laws of protection, shortage of rehabilitation and protection programs are challenging child labor reduction. As result, child labor puts a negative impact on the schooling activities of a child. The paper underlines the priority to be given for the sustainable child labor protection and the means of survival of poor families in order to achieve goals of “Education for All” through remedial social programs to support families in need and assisting them find alternative income to replace their child’s employment.

Keywords: Child Labor, Education for All, Child Labor Elimination

Introduction
Child labor is the unpalatable human aspect of a very young person having to do manual work beyond his/her physical capability. It is one of the most atrocious forms of human rights violations that cannot be eradicated without ensuring compulsory primary education. Education is a human right and a key factor in reducing poverty and child labor. Its goal achievement especially addressing access to all has an interchanging effect with childhood labor.
According to Psacharopoulos (1997) the child labor has longer term aspect that hinders the human capital formation activity that might hurt him/her in the future. Thus, understanding the interaction between education and child labor is critical in achieving both the education for all (EFA) and child labor elimination goals. According to International Program on the Elimination of Child Labor (IPEC), the elimination of child labor and EFA are becoming the “interconnected” global goals (ILO, 2006). This is not only because education is a major means of keeping children out of the labor market but also many of out-of-school children are engaged in child labor and their work acts as a barrier to accessing education.

As rightly argued by Guaracello et al. (2008) efforts to achieve EFA and the progressive elimination of child labor are interlinked. Directly or indirectly, they are affecting each other. Thus, one can understand that education is a key element in preventing child labor, and the child labor in turn is acting as the major obstacle to EFA. Consequently, since the connection between child labor and lack of access to education has long been recognized, the international labor organization (ILO) Conventions on child labor calls for access to free basic education for those removed from worst forms of child labor, and state that the minimum age for employment shall not be less than the age for completion of compulsory schooling (ILO, 1994).

In light of this, Ethiopia has ratified the two ILO core conventions on child labor (i.e., minimum age convention No. 138 and Elimination of worst forms of child labor convention No. 182). But policies and concrete interventions for addressing the child labor problem have not yet to be put in place (Dawit, 2010). Additionally, Ethiopia has ratified the UN Convention on the Rights of the Child, in May 1991. Constitutionally, Article 36 of the nation is totally devoted to the rights of children stating that every child has the right to life, name and nationality, and the right to not be subjected to exploitative labor practices and be free from corporal punishment (FDRE, 1995).

Despite the efforts, the problem of child labor in Ethiopia remained significant Dawit (2010) and Nardos, (2006) where nearly 60 percent of children work to supplement their family income, half of them were at hazardous jobs (UNDP, 2004). While ILO (1995), stressed that child labor in Ethiopia is considered as one aspect of educating children to socialize in the community and learn the essentials of life skill as they grow adults. This might have resulted from a failure to distinguish between moderate and excessive, or exploitative, forms of work. To this end, though attempts have been made to introduce the Sustainable Development and Poverty Reduction Program (SDPRP) strategy to reduce poverty, the strategy did not include explicit measures against child labor (UNDP, 2004).

Statement of the Problem

Child labor is a social dilemma and an incident obstructing the holistic growth of the child. In addition to its impact in human capital formation, child labor has serious consequences that stay with the individual and with society for far longer than the years of childhood (Zerihun, 1996). It is a widespread phenomenon in developing world. Currently, the achievement of the MDGs of halving poverty and achieving EFA is highly being affected and face difficulty in elimination of child labor.
In developing countries like Ethiopia where the worst forms of child labor are widely observed this concern is more relevant (ILO, 1996).

The available scanty information in relation to child labor in the country reveals an alarming image. Like in many other sub-Saharan African countries, a large number of children in Ethiopia join the labor force usually below the age of 14 (Dawit, 2010). In light of this, the 2001 National Child Labor Survey showed that 85 percent of the children in Ethiopia were engaging in works; where about half of the children do not attend school (CSA, 2001). In Addis Ababa, child labor has increased steadily due to rapid urbanization (Zerihun, 1996). According to the 2005 National Labor Force Survey, out of the total 222,239 children, 17,769 were working in various informal sectors found in capital city (CSA, 2005). Thus, though scanty, the findings undertaken on the child labor related aspects in the country showed that the child labor is more widespread starting at an earlier age (Bhalotra, 2003).

The study shows that the types of works children engage in are diverse (Nardos, 2006).

According to Zerihun (1996) the children in Ethiopia are commonly involving in works such as household chores, farming, looking after cattle, shoe shining, selling ‘kolo’ and bread, selling lottery tickets, weaving, transport, and trading practices. However, some indicated that most of the people feel that shoe shining; selling lottery tickets, and working as taxi assistant are normal activities that cannot be considered as child labors (UNICEF, 2003). These activities are justified in the eyes of most people in urban and rural settings as they are believed to be harmless. But pertinent to the child labor is that, children are working in the expense of schooling, in which the defining characteristics of each of child labor categories need to be considered (ILO, 2011).

Despite, strong association between different forms of child labor and educational attainment (Getachew, Martha, and Kallaur, 2005); the situation in Ethiopia has been not yet adequately studied. This reveals that the child labor in Ethiopia is not recognized as one of the major social problems that are contributing to the extreme poverty (Dawit, 2010; UNICEF, 2003). In this regard, what is being done to reduce it and encourage the children to attend schools is remained unfixed. Particularly, though it is a common practice for many children to work at home or in the fields rather than be educated, the extent of practices in eliminating the child labor and encouraging children to attend education in Addis Ababa in general and Gulele sub-city in particular is not yet studied.

Therefore, undertaking a study is found to be a critical in order to get a clearer picture on the root causes of child labor and its implications on education access for all children. It generally, attempts the following basic questions.

1. What determines children’s participation in work or education?
2. What challenges are facing the elimination process of child labor?
3. What is the implication of child labor on an EFA goal achievement?

**Methodology and Materials**
The research design employed in this study was qualitative case study assuming that it is a vital in understanding the case in detail and undertaking in-depth description about the questions raised. Case study is often used to provide context to other data offering a more complete picture and detailed information of what happened in the program and why; (Patton, 2002). Data were collected through interview, observation and document analysis. The interview was conducted mainly with children laborers, an officer from Addis Ababa city Labor and Social Affairs, Expert from Gulele sub-city education bureau and communication officer from national lottery office. Observation was undertaken with children from different working places regarding their work activities. Furthermore, documents were consulted related to the policy and strategy issues in practices and challenges in elimination of child labor.

**Samples and Sampling Techniques**

Since the study was qualitative approach the samples were selected using purposive sampling technique which leaves the room to have key informants with in-depth information on the issue.

Therefore, the sample of the study was consisted of 10 children 7 to 14 years old engaged in child labor particularly in selling lottery tickets, and shoe shining assuming that both of these works are more open and easy for the entry. In addition, they are easily observable and relatively time consuming that intervening with class time since both the work and education need engagement of a child at the same time.

Considering the mobile nature of child laborers in both lottery selling and shoe shining children, the sample selection was relied on convenience and stratified purposeful sampling procedures. Accordingly, six lottery ticket sellers, and four shoe shiners were involved in guided interviews. Since these works have male dominated trends, only two female laborers were included in the study. The people from different offices are also included in the study as key informants using stratified purposive sampling assuming that they are closer to the issue to get fruitful information for the study.

**Results and Discussion**

**Why are children working?**

**Parent Poverty and family size**

The social status of parents for working children is a common blame for child to be engaged at work instead of attending school. Directly or indirectly the economic problem forced children to engage in productive activities. Especially, this seems common practice within the households with relatively large family size. One of my informants, Bayera a 13 years old boy said that:

> We are five. My mother sometimes collects fuel wood for sale; my father is working on a daily basis. His work is on and off. Consequently, scarcity of food and other necessary

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197 It is worth noting that names to given all the research participants including that of Bayera’s are pseudonyms
things in the house is a common phenomenon. Last year I was combining working and schooling. But this year my father advised me to stop schooling and to spend all the time in shoe shining activity. Since then, I am working all the day here.

This explains that unbalanced family size and economic status urges children to shoulder major household responsibilities.

It is worth noting that names to given all the research participants including that of Bayera’s are pseudonyms

Similarly, Ayele, 14 years old boy working in selling lottery tickets, explained that

Before coming to Addis Ababa I was working with my family who are economically poor. They have six children including me. None of us is attending school. I am working every day without rest even holidays and weekends. The work needs daily struggle for survival. I am doing this work not only for myself. I am serving my family. I have to cover their cloth and some other expenses.

Besides their need for food and housing, child laborers are taking part in the labor market to fill the economic gap of their family. This gradually drives children to engage in productive activities paying no attention to its effect on development and education.

Migration and its causes

Migration seems to be one of the main causes of child labor in the study areas. Some of the children who participated in the interview of this study came to Addis Ababa from various parts of the nation. Bayu’s history reveals this as follows.

I came from Marawi, Gojjam with other friends who were engaging in lottery ticket selling. I was very eager to work hard and get significant income for me and my parents. Before coming to Addis Ababa I was working with my family. My mother was happy when I told her to come and work in Addis Ababa.

Consequently, the main intention to involve in child labor in this strange city is either to subsidize their families’ income or to ensure their own economic independence. Moreover, factors such as family conflicts and divorce may push children to migration. For instance, the case of Debele reinforces my argument. He explained that

I came here a year ago after my father had created conflict with my mother. They were always in quarrel. We had everything we needed. But they are always in doubt. The conflict got worse as time went on. Finally my mother told me that leaving the village is preferable to stay our lives. And then we left the origin to hide ourselves. Since then I engaged in such activities to get our livelihood.

Hence, family disintegration results in migration of guiltless children and makes them stay out of schooling. Another cause for children’s migration is peer pressure. Among child lottery ticket sellers some of the subjects of this study are migrants. These children left their home for Addis Ababa due to
peer pressure and the desire to make a better living by working on a seasonal basis. All of them are out of schools. Some of them are dropouts and some others have never started schooling before. Almaw is a 13 years old lottery seller came from Gojjam. He explained that:

I came to Addis Ababa six months ago to work and get money. There have been friends who worked here. They took different items to their family when they return home and bought sheep and goats to be herd. Their activities initiated me to come to Addis Ababa and to do the same for me and my parents. One of my friends told me that things are attractive in Addis Ababa. I accepted all what he said and decided to come here.

This shows that there is migration even without push from parents because of peer pressure to engage in different activities at their early age.

The shift program of Education System

The Education Bureau of Addis Ababa is practicing a full-day schooling program. Some of my subjects claimed that they are against this system. They prefer the former shift program to the current full-day program that gave a chance at least to combine working and attending education. Accordingly, one of the subjects of the study, Wondu, working in shoe shining in Menev blamed that

Previously it was possible to attend school either in the morning or in the afternoon session. As a result, I could work in free time. But after shift program has been abolished, I couldn’t attend school. I attempted to combine work and education. But it was difficult to continue. Finally I prefer survival to education and decided to work.

Accordingly, children had the chance to combine work and education before the shift program has been brought to an end. However, the abolition of shift program in education system could not allow children to share their time to work and education equally. In this regard, Ato Kidane, Educational planning officer in Gulele sub city education bureau argued that the abolition of the shift program was an urgent response for provision of quality education in the city. According to the interviewee,

The full-day program is a costly action which required additional burden from the government for educational facilities and additional classrooms. In order to fulfill the gaps in educational goal achievement and maximize the access to quality education, abolition of shift program is considered as requirement.

This shows that full-day program of education system has been set as one of the requirements for accessing quality education. But economically disadvantaged and migrant child laborers working for survival were not considered at least to combine work and education. This is especially a crucial when one considers working hours of children engaged in diversified economic activities. As I get informed from the interviews, and evidenced from observation, children in lottery selling are working for at least 15 hours in a day. They work from 6 a.m. early in the morning to 9:30 pm in the evening, whereas shoe shining children are working for 10 to 12 hours a day. For instance, Alem is eight years old. I found her selling lottery ticket in the evening (8:45 pm) at one of the kebeles ‘grocery’ in Shiromeda. She explained that:
I am selling lottery tickets moving every public places up to 9:30 pm in evening. Of course, after 7:30 pm, I am working with my mother. People buy the tickets empathetically. Mostly, at evening, the market is relatively attractive. But it is not easy task to move here and there at night. After certain times, I get very tired and fail to sleep.

This shows that children are working for long hours at their early age using immature physical and mental stamina. Moreover, they do not have time to play and interact with their age mates and friends; they couldn’t get enough time for rest. Eyasu, 12 years old lottery seller argued that “I feel sad when I see my age groups playing in fields. I spend all the day selling the lottery tickets. It is boring to work all the week without rest. I have not time for rest, play with matches”.

Furthermore, the working children feel that they are most exploited, abused, and obliged to work for long hours a day without having rest and playing time at their early age. Tayu’s case can be taken as significant evidence here. She is 10 years old living in Menen with her mother and two brothers. She is supporting her mother in baking injera, caring her sibling and selling lottery in opposite shifts. She remarked that:

I hate the work that I am working. I am out of school. I am not playing with my mates. It is too boring, and tiresome. But I have no alternatives to give it up because it is the only means to survive; my mother has not salary to cover home expenses.

Similarly Abrar 14 years old who is working in shoe shining and carrying different properties in Addisu Gebeya blamed working in this age as follows.

I am working in shoe shining and carrying different luggage from car, taxi and market to home. I am working here in the street whatever the work comes. However, it is not such attractive. It is a tiresome and boring. Sometimes sunny and dusty; in other times rainy and muddy, this is life in street working. Mostly I dislike working in this situation. But what can I do, it is a matter of life.

Thus, it seems that children are obliged to work and survive. It is not a matter of luxury rather it is a matter of survival to work than play and attend education by this age. As most of the child laborers argued they detest their work and involvement in the labor market.

The Challenges in Child Labor protection

Most of child laborers are engaging in the informal sectors regardless of their interest and age. Some of the children seriously hate their work and the environment in which they work. They like it or not they have to work and spend much of their time working for survival. This in turn makes the attempt of child labor protection a bit complicated. Its realization is not an easy task. Rather, it is a difficult activity that requires a collective effort of many stakeholders mainly of labor and social affairs (LSA).

In light of this, Selamwit, an officer in the LSA has interviewed to explain about the practices in child labor elimination process.

Accordingly, though child labor is funding-based activity, the financial capacity of LSA ties the elimination process to stay disabled. Despite the high expectations of the office, mainly because of
limited financial and professional capacity, the action of eliminating child labor in Addis Ababa remained immature. She argued that

The nature of child labor is related with funding capacity, which needs negotiating with the funding agencies, to research, treat and encounter all the challenges. Additionally, the concern of establishing rehabilitation program is not a trend in regional and the national levels. Even NGOs involving in child labor are not working for rehabilitation.

Furthermore, since child labor is age sensitive issue, identification of child’s age seems awkward trend in the study areas. According to the officer, most of the child laborers are not willing to report the exact years of their age. “They may report by adding on or reducing certain years from their actual years of age depending on their assumption of request”. Mostly they attach the age related questions with assumed benefits they are thinking to loss or get. It is difficult to regulate the problem unless the children have the birth date certificate to show the years of age.

Finally, though children are vulnerable who need closer follow up from different stakeholders including informal sectors where most child laborers are engaged, it seems that the law itself remains somewhat deficient. The interviewee said that the issue of self employed children in informal sectors is not included in the proclamation No. 377/96. But most of children are engaged in self employed activities. Additionally, the implementation of the policies, and strategies designed by international, continental, national, and regional governments is not yet working further.

Accordingly, since the child labor is illegal, their work is hidden and practicing in areas far from accessibility of law. In addition to this, the child laborers working in different sector as commission workers are facing a problem due to the incompleteness of the law. In some institutions like National Lottery Administration (NLA) child laborers are working for a certain commission. The data depicts that most of children laborers in the study areas are directly or indirectly participating in selling lottery tickets. In this regard, Ato Bedelu, Communication Officer of NLA was interviewed regarding child labor and its challenges. Accordingly, the interviewee depicted that the lottery selling children are customers of the institution. He strongly argued that the lottery ticket selling is an activity open to every citizen who has interest and capacity to perform the work. There is no any benchmark or rule or minimum criteria to be fulfilled by the sellers. It is a participatory regardless of education and training, sex, age and other related categorical requirements. Similar to other customers, children can be participated without any discrimination. They are commission workers.

This shows that since NLA has not set rules for children to be engaged or not to work in lottery selling, seemingly it is encouraging child labor which in turn has been resulted from the openness of child labor law.

According to the findings the poverty is a leading cause of child labor in the study areas. Most of the working children in the study areas are from disadvantaged economic background and reported that they are obliged to work for survival. Correspondingly, studies indicated that the high rate of child labor in Ethiopia that preventing children from receiving education is associated with
poverty (Guarcello, et al., 2008; Assefa, 2000). Therefore, poverty is an obstacle most often invoked as being the major barrier to education. Social programs to support families in need and assisting them find alternative income to replace their child’s employment will help prevent child labor.

Additionally, children are migrating to the city alone or together with their parents and relatives or friends for several reasons. Consequently, migration is found to be another cause for participation of children in the labor market in the study areas due to the fact that since migrants do not have any option to get their subsistence in a strange city, child labor has been considered as an immediate solution for their survival. The findings show that most of the respondents were migrated from different parts of the country mainly due to rural poverty, family disintegration and peer-pressure. Accordingly, none of these migrants is attending education while working at least 10 hours a day and seven days a week, getting hard at least to combine work and schooling.

Moreover, full-day schooling is found to be contributing factor for the occurrence of child labor in the study areas. Though the full-day education program has a crucial role in enhancing quality of education, the program is blamed due to its contribution for the withdrawal of children who had combined schooling and working. Especially, it blocked the intention of the disadvantaged children who had attended education in one shift and worked at other shift.

The findings also depicted that child labor is hindering educational participation of children. While schooling helps the child to grow ‘cognitively, socially and emotionally’, it is seriously endangered by child labor (UNICEF, 1999). Though international organizations and the national government targeted at increasing the school participation of children through “Education for All”, the context in the study areas show that “Compulsory Education” could not be an option to solve the problem of child labor since making a fair choice between survival works and education was a compulsory.

Many people and organizations advocate compulsory education to reduce and eliminate child labor. In this regard, ILO (2004) argued that the effective implementation of the compulsory education makes children less available for full-time work. However, this idea is either far away from context of the study areas or completely ignored the real problems of working children from poor societies. Education in the case of child laborers who came from poor families is considered as an extra thing or a leisure time’s activity. Because the main reason for the involvemnt of children in a labor is mainly to stay life. Thus, it is “a matter of survival and what to eat” question that forced children to spend their school age in works.

The data also shown that, various NGOs are working to improve awareness of the problems related to child labor in the study areas. Although awaking activity is a crucial in child labor reduction, it alone will take no where sometimes. Since there is no action oriented established system for rehabilitation program, child labor will never-ending.

Lack of adequate legal protection and its implementation is another challenge in child labor reduction. Despite the practices of child labor in the study areas, the concern of protection practices remained unenthusiastic. Notwithstanding the presence of several laws in different legal documents dealing with child labor, there is a huge gap in its implementation. According to the FDRE Constitution
Article 9 (4), all international conventions and agreements signed by Ethiopia are part and parcel of the law of the land. Nevertheless, the enforcement of the laws is weak and ‘incomplete’ (LSA, 2011) that seeks strong collaborative effort from government agencies including Ministry of education and health, Ministry of females and children’s affairs and labor and social affairs for its implementation.

In general, the child labor law is not preventing the exploitation of the child laborers in various informal sectors; rather, it is preventing the right to be employed in formal sectors through legal contractual agreements. Consequently, the child labor law is preventing child laborers from legal formation of associations and labor unions to preserve their voices and rights.

**Conclusions**

Whenever one thinks about work and education the issue of time should be a target of consideration since child laborers need to allocate their time to work and education. These children do not have options to meet their basic needs other than working. To secure subsistence, work is unquestionable which in turn requires adequate time. It seems easy to say stop child labor, but where to bring all these child laborers is a chronic aspect left unlock. Since rehabilitation program is vital in sustaining child labor protection, the concern of governmental and NGOs need to focus the establishment of preservation and prevention-based programs.

Thus, the priority has to be given for the means of survival of poor families in order to achieve the goals of “Compulsory Education” through remedial programs. Additionally, there is not any optional program for these disadvantaged children to attend education alternatively in a sub-city and regional level. This shows uneasiness of accessing education for all children. Hence, the child labor and education policies have to be formulated and operated in tandem.

**References**


The Assessment of Teacher trainees Attitude towards Teaching Profession: (The Case of Teacher Trainees in Oromia Teachers College of Education)

By
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Abstract

This study set out to investigate the attitude of teacher trainees in the three colleges under investigation (which are: Metu, Nekemte and Jimma College of Teacher Educations) towards the teaching profession. This was with a view to ascertain the extent to which variables like community attitude, teachers perception of themselves, teachers earnings may influence teacher trainees attitude towards teaching as a profession. A fifteen (16) item questionnaire was designed to elicit responses from individual teacher trainees and the teacher trainers with a view of determining the trainees attitude towards teaching profession. A representative sample size of 525 teacher trainee and 92 teacher trainer respondents were chosen from three (3) colleges of teacher education in Oromia randomly. Findings confirmed that in both case, no significance difference is seen in their responses. The result of ANOVA multiple comparisons has shown that both the teacher trainees and the trainers do have positive attitude towards teaching profession. However the study result of the percentage has noted that there are instances were both teacher trainees and the teacher trainers indicated that accorded law social status, there is no self-satisfaction in teaching, teachers are not paid their salary, and everybody in the teacher education looks forward to leaving it for more rewarding professional career. In general, the teacher trainees in Oromia College of Teachers Education exhibited positive attitude towards teaching as a profession. It is recommended that government and other employers of labor should create the enabling environment to motivate students to choose and pursue career in teaching. It is also emphasized that teachers and educators in general should continue to conduct themselves in manner that would endear the noble profession to the hearts of the upcoming generation.

Key word

- Ascribed status refers to achieved statuses are those which the individual acquires during his or her lifetime as a result of the exercise of knowledge, ability, skill and/or perseverance. Occupation provides an example of status that may be either ascribed or achieved, and which serves to differentiate caste-like societies from modern ones.

Introduction

To fulfill human needs, it is true that an individual has to select a career that he aspires to engage in, seeking satisfaction from what he/she has selected will be the next step. Because satisfaction is an attainment by a person as a results of actual involvement in the particular profession. Herzberg etal. In
the synopsis of D.Galloway etal. (1985) argue that “satisfaction at work arises from aspect of the job which meets the individuals need for psychological growth.” Even though satisfaction is derived from the womb of hard work, it doesn’t mean that all people involved in any profession will enjoy the job they are assigned to do as, unfavorable working condition, lack of opportunity for promotion, status, influence from school, family, community and the like might have been influencing them.

The choice of profession is very vital to parents as well as to their children. Every normal child thinks of what to do for survival and how to make a meaningful contribution to the society, without proper choice of profession a child may become a burden, instead of asset to the society. What children will be when they grow up has often been a matter of intense interest to parents and manpower planners (Ipaye, 1986).

Akomolafe (2003) pointed out that the individual’s vocation or career is one of the most important aspects of human endeavor because it determines a lot of things in human existence. It could either make or mar one's joy and happiness. Akomolafe further contended that true joy happiness and satisfaction are linked to proper choice of profession. He also posited that emotional and marital stability could be enhanced by the type of occupation one engages in. In the same vein, Ikeotuonye et al (1990) stated that choice of profession has been known to determine ends success or failure on a job.

In any society, now days, one of the popular and wide spread profession in which men and women are engaging in is teaching. Teaching as a profession has its own code of ethics and needs commitment. Commitment in teaching is nothing more than trust to safeguard teaching it self. The trust to safeguard teaching could not be something which is to be developed by imposition upon somebody by external pressure rather it needs to emanate form one’s own belief. This is to mean that having firm belief in something comes from being interested in it. In relation to this idea scholars noted that the following 

The teacher that we need in school must be prepared to move around in the teaching words. As to J.F. Soltis , (1985), the ultimate purpose of being professional in education is to promote learning, hence, the person joining such a profession is expected to be interested in teaching . Interest in this context refers to have positive attitude towards teaching.

Therefore, it is safe to say that some one has positive attitude towards teaching if he/she will be in position to accomplish his/her commitment with all sacrifices it demands. Otherwise, the task will not be accomplished. Unless the task of teaching is fulfilled successfully, it seems to worthless to talk about good teaching learning process. With regard to strengthening the profession, Metens and Yargan, (1988) has to say the following . “The current interest in strengthening the teaching profession is being propelled by a desire to recruit high caliber people to teach and to retain the good teacher we already have.”

Accordingly, this study will attempt to assess the attitude of the would be teachers in College Teacher Education of Oromia towards teaching profession, in respect of factors underlying their attitude such as ascribed status, salary, public attitude towards teaching profession and teachers, lack of incentive, lack of good promotion prospect and conducive working conditions etc
Hence, the investigators will made some sort of pilot survey interview to the would be teachers in College of Teacher Education of Oromia with regard to weather the above mentioned aspects have positive implication on their attitude towards teaching profession as their career.

As College Teacher Education in Oromia are among the institutions offering training to perspective teachers, it is understood that the colleges have their own lioness share in providing qualified teachers for the country’s second cycle primary schools system. Underlying that this study will attempt to assess the attitude of the would be teachers in College of Teacher Education of Oromia towards teaching profession, in respect of factors underlying their attitude such as ascribed status, salary, public attitude towards teaching profession and teachers, lack of incentive, lack of good promotion prospect and conducive working conditions etc. In fact, these factors are said to influence the attitude of the trainees.

By and large, the study tried to answer the following basic questions.

Do factors such as,

- Ascribed status
- Salary
- Joining the profession without interest
- Public attitude towards teaching profession ,and
- Teachers Promotion prospect,

influence the attitude of the trainees towards teaching as profession?

Methods and materials

The target populations in this study were the 2003E.C. prospective graduate teacher trainees’ in the three sample college of teacher education in Oromia. These included, Metu,Nekemte & Jimma Colleges of Teacher Education. That is the sample teacher trainees’ from the colleges were the source of information for this survey. To conduct such a study the researcher has employed descriptive survey type of study. The number of target population from the three sample colleges are about 3000’s. Among these target population 525 of them were considered or taken as a sample. On the other hand there are about 180 teachers teaching in the three sample colleges. Still 92 teachers were considered in the study. In order to reach the required representative sample, the researchers employed systematic simple random sampling technique. In addition to this, the data gathering procedure was considered the higher official of the college and the heads of different units.

Instruments and Data Collection Procedure

The main data collection instruments in this study were questionnaire and interview. These instruments preferred since they are appropriate to seek the necessary information, opinion, and attitude in structured framework from the respondents. Questionnaire and interview were helpful in getting the necessary information from the trainees, student council, teachers and the college deans.
The questionnaire involved structured multiple choice as well as open ended and items that were to be answered in five point-scale ranging from strongly agree to strongly disagree or from very high to very low (Lickert scale method). The interview was designed to elicit information from the student counsel, teachers and deans of the college. The validity and reliability of the instruments was approved by experts in the area. Pilot survey was taken place one department of Jimma CTE and necessary amendment was made to the instruments before getting into the main research task.

**Administration of the Instruments**

After identifying the number of study population, questionnaire was distributed to 525 of the study target population (Teacher Trainees of the three colleges). In the mean time the necessary clarification was made by the researcher and assistant data collector incase needs come from the respondents. The completed questionnaire was collected in duration of a more than a month as it was not possible to get back as has been planned in a duration of a week of the attendance of each college. The interview was made by the principal researcher for sample college instructors and principal of each college.

**Method of Data Analysis**

Depending on the number of groups involved and the type of measurement to be used to measure the dependent variable (Nachmios, 1987) the following statistical techniques was used in this study. Percentage was be used to explain the personality characteristics of the respondents and the see the degree of both the teacher trainees and the teacher trainer responses and to show the disparity in responses among different groups of respondents. For the attainment of the study validity other statistical such as ANOVA for multiple comparison was employed.

**Results and Discussion**

As can be seen from Table_1, majority of the teacher trainee students, that are 278 (53.7%) have noted that teacher accorded low social status, on the other hand there are 213 (41.2%) trainee teachers who disagree with the idea that teachers accorded law social status. 26 (5%) of the teacher trainees seen neutral in their response to the social status of teachers. As far as the self satisfaction of teacher in teaching, majority of the teacher trainee respondents, 436 (84.6%) agreed that there is no self satisfaction in teaching, 59 (11.4%) of them disagree with the idea, and 20 (3.9%) which are few couldn't identify their position. In line with the statement of teachers are well recognized, majority of the teacher trainee /366 (70.1%) of them confirmed that teachers are well recognized, 105 (20.4%) of them disagree with the idea of teachers are well recognized. Whereas, 44 (8.5%) of them fail to specify their position. Regarding the idea of teaching in Oromia involves working in a depressive environment, 277 (52.8%) of the respondents noted they agree with the statement, 192 (36.6%) of the teacher trainees disagree with the idea/the statement, whereas 127 (24.2%) of the respondents remained neutral in their responses to such a statement. Regarding the statement of teachers are poorly paid, majority of the teacher trainees which are about 459 (88.1%) responses addressed that they disagree with the idea, 53 (10.2%) of the teacher trainees noted they agree with the idea, and where as only 9 (1.7%) of the respondents remained neutral. As far as the statements of teachers are not regularly promoted is concerned, majority of the respondents, 293 (56.3%) of them seen disagree
with the idea, 193(37.1%) agreed with it and 34(6.3%) remained neutral in this respect. In line with the response of the teacher trainees to the statement teachers in Oromia are not timely paid their salaries, 234(45.7%) seen agree with the idea, 214(41.5%) of them disagree with the idea and 73(13.8%) of the teacher trainees seen unspecified their position. Regarding item 8, which is stated as teaching is interesting job, majority of the teacher trainees assured that it is interesting. That is confirmed by 472(91.6%) or the teacher trainee responses and few of the trainee respondents disagree with the idea and remained neutral. As far as how of joining the teaching profession, still majority of the respondents, 451(87.2%) noted that the joined the profession with their interest. However, 51(11.9%) respondents disagree and 15(2.9%) and remained neutral. Regarding the statement of there is no opportunity for continuous career development in teaching in Oromia, 380(72.8%) of the trainee teachers agreed with it, 118(22.6%) of them disagree and 24(4.6%) of the trainees remained neutral.

As far as the statement of every one in teacher education, looks forward to leaving it for more rewarding careers is concerned, 188(36.2%) of the trainee respondents noted they agree, whereas, majority of the trainee respondents have noted that they disagree with the idea and 45(8.7%) of them remained unclear with their responses. Regarding item 12, which is stated as I like teaching profession, majority of the teacher trainees, 345(86.2%) of them clearly addressed they like it. 32(12%) found disagree with the idea and only 9(1,7%) are unclear with their position. As far as the statement of teachers lack self confidence concerned, 408(79.5%) of the teacher trainees agreed with it, though the reason behind is not as such clear. On the other hand, 83(18.1%) and 22(4.3%) noted they disagree and unclear with their response respectively. Concerning the Public attitude towards teaching profession, 241(46.8%) teacher trainee respondents confirmed that, Public attitude towards teaching profession and teachers is not good, 230(44.6%) respondents disagree with the idea and 44(8.5%), which are few, failed to specify their position. As far as the answer to the statement of there is no opportunity for a teacher’s continuous professional development, 208(40%) of the teacher trainees agreed with such idea, 272(52.3%)of the teacher trainee respondents disagree with it and 40(7.7%) of them haven’t specify their position.
Table_2. Teachers Trainer response

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<tr>
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<th>1</th>
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<th>5</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>a1</td>
<td>Teachers accorded law social status</td>
<td>24(25.5%)</td>
<td>46(48.9%)</td>
<td>4(4.3%)</td>
<td>12(12.8%)</td>
<td>8(8.5%)</td>
</tr>
<tr>
<td>a2</td>
<td>There is no self satisfaction in teaching</td>
<td>8(8.5%)</td>
<td>10(10.6%)</td>
<td>2(2.1%)</td>
<td>33(35.1%)</td>
<td>41(43.6%)</td>
</tr>
<tr>
<td>a3</td>
<td>Teachers are well recognized</td>
<td>9(9.5%)</td>
<td>38(40%)</td>
<td>11(16.6%)</td>
<td>24(25.3%)</td>
<td>13(13.7%)</td>
</tr>
<tr>
<td>a4</td>
<td>Teaching in Oromia involves working in a depressing environment</td>
<td>28(30.4%)</td>
<td>32(34.8%)</td>
<td>12(13.0%)</td>
<td>16(17.4%)</td>
<td>4(4.3%)</td>
</tr>
<tr>
<td>a5</td>
<td>Teacher are poorly paid</td>
<td>52(53.3%)</td>
<td>28(29.8%)</td>
<td>4(4.3%)</td>
<td>7(7.4%)</td>
<td>3(3.2%)</td>
</tr>
<tr>
<td>a6</td>
<td>Teachers are not regularly promoted</td>
<td>33(35.1%)</td>
<td>19(20.2%)</td>
<td>10(10.6%)</td>
<td>24(25.5%)</td>
<td>8(8.5%)</td>
</tr>
<tr>
<td>a7</td>
<td>Teachers in Oromia are not timely paid their salary</td>
<td>10(10.8%)</td>
<td>9(9.7%)</td>
<td>6(6.5%)</td>
<td>33(35.5%)</td>
<td>35(37.6%)</td>
</tr>
<tr>
<td>a8</td>
<td>Teaching is interesting job</td>
<td>2(2.2%)</td>
<td>6(6.5%)</td>
<td>5(5.4%)</td>
<td>16(17.2%)</td>
<td>64(68.8%)</td>
</tr>
<tr>
<td>a9</td>
<td>Joined teaching profession with interest</td>
<td>10(10.6%)</td>
<td>13(13.8%)</td>
<td>4(4.3%)</td>
<td>19(20.2%)</td>
<td>48(51.1%)</td>
</tr>
<tr>
<td>a10</td>
<td>There is no opportunity for continuous career-long self improvement in teaching in Oromia</td>
<td>9(9.6%)</td>
<td>15(16.0%)</td>
<td>4(4.3%)</td>
<td>32(34.0%)</td>
<td>33(35.1%)</td>
</tr>
<tr>
<td>a11</td>
<td>Every body in teacher education looks forward to leaving it for more rewarding professional career</td>
<td>53(56.4%)</td>
<td>21(22.3%)</td>
<td>6(6.4%)</td>
<td>9(9.6%)</td>
<td>5(5.3%)</td>
</tr>
<tr>
<td>a12</td>
<td>I like teaching job</td>
<td>6(6.5%)</td>
<td>4(4.3%)</td>
<td>2(2.2%)</td>
<td>36(38.7%)</td>
<td>45(48.4%)</td>
</tr>
<tr>
<td>a13</td>
<td>Teachers lack self confidence</td>
<td>6(6.5%)</td>
<td>3(3.3%)</td>
<td>15(16.3%)</td>
<td>18(19.6%)</td>
<td>50(54.3%)</td>
</tr>
<tr>
<td>a15</td>
<td>Public attitude towards teaching and teachers is not good</td>
<td>24(26.4%)</td>
<td>31(34.1%)</td>
<td>10(11.0%)</td>
<td>9(9.9%)</td>
<td>17(18.7%)</td>
</tr>
<tr>
<td>a16</td>
<td>There is no opportunity for teachers professional development</td>
<td>19(20.7%)</td>
<td>28(30.4%)</td>
<td>6(6.5%)</td>
<td>24(26.1%)</td>
<td>15(16.3%)</td>
</tr>
<tr>
<td>a17</td>
<td>I am proud being a teacher</td>
<td>5(5.7%)</td>
<td>3(6.9%)</td>
<td>25(28.7%)</td>
<td>51(58.6%)</td>
<td>87(100%)</td>
</tr>
<tr>
<td>a18</td>
<td>Teaching the source of all profession</td>
<td>1(1.1%)</td>
<td>1(1.1%)</td>
<td>11(12.0%)</td>
<td>79(85.9%)</td>
<td>92(100%)</td>
</tr>
</tbody>
</table>

As one can see from the above table_2, 70(74.4%) teacher trainer respondents disagree with the idea that states teachers accorded law social status. 20(21.3%) of them agreed with the idea of teachers accorded law social status and 4(4.3%) failed to specify their position. Concerning the statement of
there is no satisfaction in teaching, 18(19.1%) of the teacher respondents disagree with it, majority of the instructors who are accounted for 74(80.1%) agreed with the statement of there is no satisfaction in teaching and only 2(2.2%) of the teacher respondents couldn’t specify their position. As far as the statement of teachers are well recognized, 47(49.5%) the respondents disagree with it. 37(39%) of the respondents agreed with the idea and 11(16.6%) them haven’t identified their position. Regarding the statement of teaching in Oromia involves working in a depressing environment, 60(65.2%) of the teacher respondents noted that they disagree with such idea, 20(21.7%) of the teacher respondents agreed with the idea and 12(13%) of them haven’t specify their position. As far as the statement of teachers are poorly paid is concerned, majority of the teacher respondents who are accounted to 80(83.1%) noted that they disagree with it. The other teacher respondents, who are about 10(10.6%) noted that they agree with the idea and 4(4.3%) of the teacher respondents failed to specify their position. Regarding the statement of teaching interesting job, 8(8.7%) only few teacher who are about 8(8.7%) seen disagree with such idea and still few teacher that are accounted to 5(6.5%) of the teacher respondents found unclear with their position. In line with the statement of teaching is interesting job, majority of the teacher respondents who are about 80(86%) have seen angered with it. Concerning the statement of joined the teaching profession with interest, 23(24.4%) of the teacher respondents response noted that they disagree with it. Which means, they joined the profession without interest, may be simply for making their temporal livelihood. On the other hand the response of the majority teachers that accounted to 67(71.3%) clearly addressed that they joined the profession with interest and only few or 4(4.3%) of the teacher respondents that unclear with their position. As far as the statement of there is no opportunity for continuous career-long self-improvement in teaching in Oromia, 24(25.6%) of the teacher respondents response noted that they disagree with such idea. Few of the teacher that are accounted to 4(4.3%), found unclear with their position to such a statement. On the other hand majority of the teacher respondents who are accounted for 65(69.4%) seen agreed with there is no opportunity for continuous career-long self-improvement in teaching in Oromia.

Regarding the statement of everybody in teacher education looks forward to leaving it for more rewarding professional career, 74(78.7%) of the teacher trainer respondents noted that they disagree with such an idea. 14(14.9%) seen agreed with the statement and 6(6.4%) of the teacher respondents seen unclear with their response to such a statement. Concerning the statement of I like of teaching job, 10(10.8%) of the respondents noted they don’t like it. Majority of the teacher trainer respondents who are accounted for 81(87.1%) have noted that they like teaching job. As far as the statement of teachers lack self-confidence, 9(9.8%) of the teacher respondents noted that they disagree with It.
15(16.3%) of the teacher respondents seen unclear with their position. However, the response of the majority teachers who are accounts for 68(73.9%) have clearly addressed that teachers lack self-confidence. In line with the statement of public attitude towards teaching profession and teacher is not good, 55(60.5%) of the teacher trainer respondents seen to disagree with it. 10(11%) of the teachers seen unclear with their position and 26(28.6%) of the teachers seen agreed with it. Regarding the statement of there is no opportunity for a teacher professional development/continuous professional development, about 47(50.1%) of the teacher respondents seen disagree with it. On the other hand, 39(42.4%) of the teacher seen agreed with the idea and few of the teacher who accounted to 6(6.5%) seen unclear with their position of the given statement.

As indicated in table 3, the result of multiple comparisons teacher trainees’ response from the three colleges has shown that teacher trainees in the college of teacher education do have positive attitude towards teaching profession.

Table3. Multiple Comparisons teacher trainees response from the three colleges
Tukey HSD

<table>
<thead>
<tr>
<th>(I) college</th>
<th>(J) college</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>-.06983</td>
<td>.06266</td>
<td>.506</td>
<td>-.2172</td>
<td>.0775</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.05648</td>
<td>.06383</td>
<td>-.2066 .0936</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>.06983</td>
<td>.06266</td>
<td>.506</td>
<td>-.0775</td>
<td>.2172</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.05648</td>
<td>.06383</td>
<td>.0936 .2066</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>.01335</td>
<td>.06099</td>
<td>.974</td>
<td>-.1301</td>
<td>.1568</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.01335</td>
<td>.06099</td>
<td>.1568 .1301</td>
</tr>
</tbody>
</table>

Table 4: Multiple Comparisons teachers response from the three colleges
Tukey HSD

<table>
<thead>
<tr>
<th>(I) college</th>
<th>(J) college</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>.11562</td>
<td>.13991</td>
<td>.688</td>
<td>-.2191</td>
<td>.4503</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>-.15852</td>
<td>.16776</td>
<td>.614</td>
<td>-.5599</td>
<td>.2428</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>-.11562</td>
<td>.13991</td>
<td>.688</td>
<td>-.4503</td>
<td>.2191</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>-.27414</td>
<td>.18046</td>
<td>.288</td>
<td>-.7059</td>
<td>.1576</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>.15852</td>
<td>.16776</td>
<td>.614</td>
<td>-.2428</td>
<td>.5599</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>.27414</td>
<td>.18046</td>
<td>.288</td>
<td>-.1576</td>
<td>.7059</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen in table 4, the result of multiple Comparisons teachers response from the three colleges noted that instructors in the college of teacher education do have positive attitude towards teaching profession.

In case of the statement that stated as teachers accorded law social status, as has be seen indicated in Table:5, majority of the teacher trainee students, that are amounted to 278(53.7%) have noted that...
teacher accorded low social status, on the other hand there are 213 trainee teachers who disagree with the idea that teachers accorded law social status. However, the response by teacher trainer has seen in contrary with that of the teacher trainees. As noted in table:6, 70(74.4%) teacher respondents disagree with the idea that states teachers accorded law social status. Regarding the statement of there is no self satisfaction of teacher in teaching, majority of the teacher trainee respondents, 436(84.6%) agreed that there is no self satisfaction in teaching. In line with such a statement majority of the teacher trainers 74(80.1%) agreed with the that there is no satisfaction in teaching. Hence, both the trainees and the trainers seen to have the same opinion in this respect. Regarding the statement of teaching in Oromia involves working in a depressive environment, 277(52.8%) of the respondents which are majority, noted they agree with the statement. In line with this statement, majority of the teacher trainers 60(65.2%) found to disagree which means teaching in Oromia doesn’t involve working in a depressive environment. Regarding teachers in Oromia are not timely paid their salary Majority of the teacher trainers noted that they agree where as more than the teacher trainees disagree with such an idea. The difference in their response may be attributed to the teacher trainees’ unemployment yet. About the statement of teaching is interesting both majority of the teacher trainees and the teacher trainers noted that teaching is interesting job. As far as how of joining the teaching profession both group have noted that they have Joined teaching profession with interest. Regarding the statement of there is no opportunity for continuous career-long self improvement in teaching in Oromia, both the teacher trainees and teacher trainers’ response confirmed that there is no opportunity for continuous career-long self-improvement in teaching in Oromia. In line with the statement of teachers lack self confidence, 408(79.5%) of the teacher trainees and 68(73.9%) of the teacher trainers with it. Though the reason is not clear, it is has seen teachers seems lacking self confidence. However, despite such answer, both of the respondents seen they are proud of the teaching profession. The descriptive statistic result is also assured that both groups have seen witnessing positive attitude towards teaching profession.

Conclusions

The study result in general has noted that the trainee teacher attitude towards teaching profession is good. This has been confirmed by the multiple comparison result of the one way ANOVA. However, there are some instances on which both teachers’ trainers and of trainee teachers noted that teachers accorded law social status, there is no satisfaction in teaching, teacher are poorly paid, there is no opportunity for continuous career-long self-improvement in teaching in Oromia, teachers lack of self-confidence, teachers are not regularly paid their salary and the trainee teachers addressed that public attitude towards teaching is not good.

Acknowledgements

First of all I would like to address my heartfelt gratitude to Jimma University Research and publication office for funding and facilitating while conducting this study.
We would also like to extend our thanks to College of Teacher Education, instructors, teacher trainees and college heads for their cooperation and providing us with necessary assistance while the study/data gathering was undertaking in their institutions.

References


Galloway, D et al.” Source of satisfaction and dissatisfaction for New Zealand primary school teachers”


Quality Assurance Practices: The Case at Jimma University, College of Agriculture and Veterinary Medicine

By

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Abstract

This study attempts to examine the status of quality assurance practices in one of the major colleges in Jimma University, JUCAVM. This exploratory study is based on pragmatic mixed-methods design. The data for the study were obtained from primary and secondary sources. Questionnaire, unstructured interview, observation and documentary analysis were used to gather relevant information for the study. Two stage, purposive and stratified sampling methods were employed to select subjects of the study: ranking students, student council representatives, instructors and department heads. The sample was drawn from all major academic units –departments under College of Agriculture and Veterinary Medicine. The study revealed that in spite of the predominant difficulties and problems (internal and external) the departments have faced in their effort to maintain quality input standards, the discussions made have explicitly pointed out a sign of strength regarding the existence of minimum input standard operating procedures in the college. By and large, the study would seem to have proved that internal and external examination, peer review of exam items and moderation of results were not in use as tools of maintaining outcome standards by almost all of the departments in the college except that external examination exercise was found to be exclusive practice of the School of Veterinary Medicine. However, outcome review, though not systematized, was utilized in one way or another as a mechanism for soliciting feedback about graduates performance from employers and the graduate themselves. Thus, in support of the findings of the study the following are recommended. The college needs a comprehensive approach to quality assurance in order to ensure that all departments channel their quality care efforts into achieving the colleges’ vision and mission. The College should have a quality assurance policy of its own to which all departments and schools have to conform. Moreover, existing good practices, processes and transactions that occur in the college must be made more operational for quality assurance parallel to other incoming relevant input, process and output standards and procedures. Quality assurance standards might be developed based on available best practices, national or transnational. This calls for the University’s firm stand to be committed in establishing Quality Care Unit, at the College, entrusted with supporting departments and schools in quality care matters.

Introduction

The rapid changes in the higher education context driven by political, economic and socio-cultural forces in the latter part of the 20th century have generated concern for quality and created challenges
to the implicit and self-evident traditional views about assuring quality in universities. The major changes include: massification of education, greater diversity in terms of program provision and student types, matching programs to labor market needs, shrinking resources, heightened accountability and indirect steering of higher education. These have brought a call for more formal quality assurance systems than was needed in the traditional elite universities (Mulu, 2012). As a result, various countries across the world have adopted formal quality assurance systems with the purpose to regulate and improve quality of their higher education systems.

UNESCO (2003) also suggested that in most countries of the world, judgments about the quality of education have been an internal affair placed under the responsibility of educational authorities at governmental and institutional level. However, Tesfaye and Kassahun (2009) noted that, the very first quality audits of Ethiopian universities by the Higher Education Relevance and Quality Agency (HERQA) revealed that higher education institutions have made only modest progress in establishing robust and comprehensive quality assurance systems. While they have embraced the quality concept, many have yet to develop quality assurance policies and strategies and establish efficient structures that can systematically assure quality. A number of quality-related problems persist.

While acknowledging that the need to assure and enhance quality is embraced by both public and private institutions, Tesfaye and Kassahun (2009) and HESO (2004) asserted that, it is early days and few HEIs have included an explicit quality assurance function within their legislation. Similarly, it is still rare to find a quality assurance policy or strategy. While some have set up quality assurance units, these are very much in their infancy and are just becoming functional. Still to be developed in most institution are mechanisms for systematic collection and analysis of data that informs decisions on quality. In general, all HERQA audits showed that quality assurance mechanisms and systems are not fully in place in HEIs. The institutions lacked comprehensive and robust systems for quality assurance. Furthermore, the studies confirmed that, in these institutions, there is not generally a system of setting service standards or a process of evaluation that ensures services meet client needs (whether these clients are learners, staff or other stakeholders). Therefore, it is very difficult for them to make any claims regarding the quality of the education they are providing.

Jimma University College of Agriculture and Veterinary Medicine is one of the major public Agriculture colleges in Ethiopia. Currently, the college offers programs, which lead toward degrees in different fields of studies (Retrieved from http://en.wikipedia.org/wiki/Jimma_University). Very recently, the college has changed its direction by expanding graduate programs at MSC and PhD level. It aspires to contribute to the development of the country through applied research, thereby reducing the levels of poverty and attendant risk of strife in the country. This is reflected on the visions, missions and goals of the institution. For example, it envisioned “to take a premier position nationally, renowned in Africa and to be recognized in the world through enhanced research, innovation and community services among others.” Despite the College’s ambitions, however, there are a number of hurdles to be tackled if the institution is to realize its vision of taking premier position nationally, renowned in Africa and to be well recognized in the world. In practice, the achievements
of the college’s expansion and transformation program will likely depend upon the quality of services it provides.

The aforementioned arguments imply that quality is the responsibility of the University and the individual colleges not of the external QA agency. The key to quality provision are also the institutions themselves. Its effectiveness, relevance, and standards of faculty teaching, research, and service; its ability to produce effective outcomes; the nature of its facilities; and other factors have to align with the requirements of the university’s purpose, the national quality agency and with the international understanding of quality as developed through research and scholarship. In such circumstances, therefore, there is legitimate ground to extensively and properly use institutional quality assurance mechanisms to ensure quality. Quality assurance mechanisms are means to achieve quality ends. A wise use of these instruments will ensure maintenance of quality (World Bank, 2002).

In summary, it is pertinent to note that quality assurance or internal quality care is primarily the job of HEIs. These institutions are required to establish a coherent quality ensuring mechanisms to assure themselves that acceptable and highest possible standards are achieved in all academic areas (Tesfaye and Kassahun, 2009; Tesfaye and Rayner, 2005). In the sphere of higher education, as it seems a fashion of the day, assessment is moving from a revision of institutional inputs to an evaluation of outcomes against stated purposes, and from a mostly external exercise to the development of internal quality assurance mechanisms (ENQA : 2007). With these trends, therefore, it becomes apparent that there is a remarkable need to carry out close investigation in order to affirm that universities are demonstrating quality outcomes by setting comprehensive systems for establishing, effecting, assessing, and where necessary reviewing and updating quality assurance practices and procedures (Mekasha, 2005; World Bank, 2002). It is this awakening cause that has formed the purview of this paper. Hence, the study will try to explore the extent that appropriate quality assurance practices are presently in existence at Jimma University College of Agriculture and Veterinary Medicine. In responding to the foregoing concern, the study attempted to answer the following basic Questions:

- Do such appropriate quality assurance mechanisms are in place in the College?
- If so, what measures does the College regularly take to maintain minimum input, educational process and output standards?
- What are the challenges the College has so far faced in this regard?
- What should be done in the future to overcome these challenges?

Objective of the Study

The general objective of the study is to assess the extent that appropriate quality assurance practices were presently in existence at Jimma University, College of Agriculture and Veterinary Medicine.

Materials and methods

This exploratory study is based on the pragmatic mixed-methods design. Mixed-methods approach is useful to develop a better understanding of complex phenomena by triangulating or corroborating or
complementing one set of results with another and thereby enhancing the validity of inferences (Mulu, 2012).

**Data Sources and instruments of data collection**

The data for the study were obtained from primary and secondary sources. Questionnaire consisting of both closed and open ended items, unstructured interview, observation and documentary analysis were used to gather relevant information for the study.

**Sample and Sampling Techniques**

The research participants in this study were, as it has been indicated above, ranking students, student council representatives, instructors and department heads. The sample was drawn from all major academic units –departments (Horticulture and Plant Science, Animal Science, Agro Economics and Agricultural Extension, Natural Resource Management, Crop Production and School of Veterinary Medicine) under College of Agriculture and Veterinary Medicine.

Different techniques have been used in selecting the subjects of the study. Purposive sampling technique was preferred, as it leaves room for the researcher to collect detailed information as required. Seniority (academic rank and long stay of lecturers), and academic standing (cumulative rank order), long stay and student council membership of students were taken in to account in selecting these subjects for the study. The reason behind this selection is that since the focus of the study is only on quality assurance mechanisms being practiced and/or have been put in place since long ago in the college, graduating class ranking students, senior lecturers, department heads and student council representatives are expected to have relatively better exposure (access) and experience to identify well established departmental or college level quality assurance norms than others.

The data collected through different instruments were analyzed based on the nature of the instruments and questions. The quantitative data was coded, entered and analyzed using SPSS software (SPSS 16). Frequency counts, percentages, mean and standard deviation and Chi-Square were used for the data analysis (Zar, J. H., 1999). Interview, documentary analysis and observation results were presented parallel to every statistical outcome under common and specific themes. It is because integration of quantitative and qualitative results into a coherent conceptual framework is an important step in a mixed methods study.

**Results and Discussion**

This section presents data analysis on the experience of the college in terms of employing quality assurance methods and procedures. A list of possible parameters (in rating scales) was administered to staff and student respondents. Here an attempt was made to investigate the main features of quality assurance mechanisms – input, process and output standards. To this effect, a number of inputs, process and outcome indicators were framed and respondents were asked to express their agreement or disagreement regarding the presence of these standards in the College or their department. The aim of this was to understand the use of quality assurance methods, instruments and procedures in the
target college. Interviews were also conducted with heads of departments and student council representatives. Findings of the quantitative data are presented first in the subsequent tables. But, due to page limits enforced by JU Research and Publication Office a number of essential input, process and outcome indicators are left out from the three tables.

**Input standards**

The input segment includes the status of students, teachers, curriculum and facilities. Results of the perception survey which show how students and instructors perceive input standards and the mechanisms by which they can ascertain them are presented in the following table.

**Table 1: Responses on input standards**

<table>
<thead>
<tr>
<th>Performance indicators</th>
<th>Students</th>
<th>Respondents</th>
<th>Total</th>
<th>Test Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean N</td>
<td>Std. Dev.</td>
<td>Mean N</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>Academic units benchmark their standard</td>
<td>4.00 12</td>
<td>.667</td>
<td>4.20 18</td>
<td>.616</td>
</tr>
<tr>
<td>Accurately mapping the standards expected</td>
<td>4.10 12</td>
<td>.568</td>
<td>4.00 18</td>
<td>.795</td>
</tr>
<tr>
<td>Organized department internal system of approval</td>
<td>3.60 12</td>
<td>1.07 5</td>
<td>3.70 18</td>
<td>1.21</td>
</tr>
<tr>
<td>Curriculum design involves workshop</td>
<td>3.60 12</td>
<td>1.35 8</td>
<td>4.20 18</td>
<td>1.19</td>
</tr>
<tr>
<td>Designing standard checklist</td>
<td>3.70 12</td>
<td>1.16 3</td>
<td>3.80 18</td>
<td>1.19</td>
</tr>
<tr>
<td>Key skills in the curriculum guide validation</td>
<td>3.70 12</td>
<td>1.16 3</td>
<td>3.80 18</td>
<td>1.19</td>
</tr>
<tr>
<td>assesses the professional standing of all staff in the department</td>
<td>3.50 12</td>
<td>1.17 3</td>
<td>3.30 18</td>
<td>1.12</td>
</tr>
<tr>
<td>assesses the credentials of staff handling particular courses</td>
<td>3.80 12</td>
<td>1.03 4</td>
<td>4.20 18</td>
<td>1.616</td>
</tr>
<tr>
<td>assesses staff/student ratio</td>
<td>3.70 12</td>
<td>1.16 4</td>
<td>4.20 18</td>
<td>.894</td>
</tr>
<tr>
<td>provides students with clearer information about programs</td>
<td>3.90 12</td>
<td>.568 3</td>
<td>3.70 18</td>
<td>1.03</td>
</tr>
<tr>
<td>assessing what knowledge and skills a student should ensure the achievement of key skills(subject specific)</td>
<td>4.00 12</td>
<td>.667 4</td>
<td>4.10 18</td>
<td>.553</td>
</tr>
<tr>
<td>assesses the extent that the department provides induction surveys teaching farm(dairy, horticulture, greenhouse)</td>
<td>4.30 12</td>
<td>.823 4</td>
<td>4.20 18</td>
<td>6.16</td>
</tr>
<tr>
<td>assesses the quality of learning resources</td>
<td>3.80 12</td>
<td>.919 4</td>
<td>4.00 18</td>
<td>.795</td>
</tr>
</tbody>
</table>

As can be seen from Table 1 above, the numeric scale score averages reflect overall strength. With the exception of reactions to items 7, 16, 17, 18, 21, 22 and 23, in the rest sixteen cases the student respondents and the instructors unanimously reported that there were vivid practices which attested college level or departmental effort intended to maintain quality of institutional inputs such as staff, learning resources and curriculum design.
It was also evident in the interview responses that there was a tendency by institutional management to develop policies that do quite match the realities on the ground in terms of institutional cultures, staffing levels, resource availability and level of institutional development. Standards, performance benchmarks, values and best practices are based on institutions abroad, and institutional missions, plans and policies are developed that are in line with those institutions and the ideas of experts from those foreign contexts.

Consistent with the above information, documentary analysis results revealed that in order to realize one of the major missions of the college- Capacity Building for Sustainable Horticulture Development in Ethiopia-the department of horticulture has made significant move in establishing strong and fruitful relationship with European and Ethiopian partners in launching MSc program in horticulture. This was evidenced by a project intended to accomplish the mission of the college and the department. The project started officially October 1, 2007. During the inception phase, a detailed working plan was elaborated in consultation with the project partners and other stakeholders and approved by NUFFIC in April 2008. In the meantime the project team had already started preparatory activities for curriculum development and investments in new facilities in order to ensure a timely start of the revised MSc curriculum in the first semester of the academic year 2008/2009. The project also assumes a co-operative relationship/partnership between the Ethiopian Horticulture Development Agency and the two higher education institutions. It is unique in that while it articulates meaningful partnership, it emphasizes also principal input aspects of education program development and implementation.

Thus quality assuring academic programs at the college has both an internal dimension, which involves committees assessing programs before they are introduced, and an external dimension, where HERQA comes in to accredit the same programs. The process of ensuring that quality programs are developed is admittedly a rigorous one. As is the case with quality assuring teaching, different academic disciplines also have additional mechanisms to the generic ones outlined above, so that the actual practices to some extent vary from department to department.

Depending on the specific requirements of a discipline and as pointed out in the foregoing paragraphs, there is active involvement of external stakeholders in quality assuring programs. After developing a program, departments invite external stakeholders, like professional bodies in the case of horticulture and veterinary medicine, and ask them to look at the proposed courses and give their input. Moreover, apart from using the traditional university channels consisting of academic committees, quality assurance of academic programs at the college also makes use of external peer reviews, where academics in other universities evaluate programs that are being developed (in the case of veterinary medicine and horticulture, for instance). Generally, external stakeholders make their own suggestions based on their experience and expectations as well as on international trends.

However, it is important to note the breakdown of responses, in the table above, specifically in the neutral areas. Further assessment may be used to secure more specific information as to why there is
less agreement in some areas. This information may be beneficial and helpful for program planning and curriculum development.

Unlike the sixteen cases, in the table above, in which the instructors and the students did not vary in their assessment, a considerable difference (in the five out of the six cases p<0.05) was observed in the remaining six cases as they were rated less favorably by either groups. The cases were: a) ensuring the acquisition of minimum recommended reading materials, b) scrutinizing proposals to be introduced, withdrawn or amend courses, c) course outlines for any developed programs are subjected to external review, d) assessing the professional standing of all staff in the department, e) sending a new program proposal to other universities in the region/country, and f) preparing internal review checklists. In the first three cases: a, b, and c, student respondents were uncertain about the implementation of activities that pertain to issues indicated in the cases.

A closer look at these cases, however, could produce substantive information as to why such a difference of opinion had existed on the student respondents’ part. Input related issues reflected in b and c: scrutinizing proposals to be introduced, withdrawn or amend courses; and course outlines for any developed programs are subjected to external review respectively, might not be real concerns of great majority of students as their principal duties are attending classes(practical and lectures) and studying regularly among others. More often, scrutiny of proposals and liaising with external reviewers are sole responsibilities of department heads and instructors involved in academic committees formed with the aim of accomplishing critical scrutiny of proposals and scholarly productions. Consequently, these quality assurance issues could get very little attention of the students although their participation and follow up might be seriously required. This situation, therefore, could lead the students to lack of awareness of the issues stated above.

Interview with student representatives also confirmed that they do not usually involve in curriculum design but in curriculum implementation. Implicit in this kind of consultative approach are the students’ doubts about external review and proposal scrutiny efforts made by the department during curriculum design in the absence of their representatives’ or the students themselves.

It is clear from the sentiments expressed by the department heads above during the interview that there is a general feeling among staff and students that new programs suffer from shortage of basic facilities like textbooks and references. Even those available are not related with the number of students in the departments. In this regard, however, it is important to note that, although there is a very high likelihood that this situation is universal in most of the departments in the college, care is taken here not to generalize the survey findings to the entire academic units. Because, there were interview results suggesting a different scenario as far as the Department of Horticulture is concerned. As per the opinion of the head of this department, there is a separate library for horticulture programs. In this academic year the department has allocated 10,000 USD to furnish the library with books and reference materials, in addition to last years’ reading materials purchase. Hence, we can observe from the aforementioned discussions that failure to ensure availability of the minimum number of books
and reference materials before officially beginning a new scheme is associated only with some departments but not all.

Regarding the following issues: assessing the professional standing of all staff in the department, sending a new program proposal to other universities in the region/country, and preparing internal review checklists, instructors reported that they were uncertain whether the mentioned activities had been implemented or not. Interestingly enough, the issue of assessing the professional standing of all the staff has direct relationship with the status, experience and qualification of the respondents, instructors. And hence, it seems, we have ground to believe that the researcher was reliably informed about the case in point.

In this connection an opinion expressed by a department head, during the interview, does seem to go with the above view shared among instructors. “There is a policy which persuades us not to employ MSc holders in some fields. MoE normally assigns high caliber undergraduate students. It is not we but the system which determines a minimum requirement for employing or deploying instructors”.

Moreover, we can generate supportive evidence from the web page of the college and the university, jcolagri@telecom.net.et and http://www.ju.edu.et respectively, Copyright © 2010, concerning the staff profile of the college. On the web page, anyone who has access to the internet, could easily observe and count number of instructors having first degree, 14,7,6 and 3 in Horticulture and Plant Science, Natural Resource Management, Agricultural Economics and Extension and Animal Science departments respectively. The number might increase under normal circumstances, given that all the instructors of the college might have not attached their photos and addresses to the home page for likely reasons we did not know.

While these were innovative schemes meant to alleviate a problem of brain drain and keep current programs running, the quality of the offerings is obviously compromised. Developing assistant lecturers to become competent in teaching and learning will apparently take a long time.

In addition, the strategic plan has identified strategic issues, strategies and targets. As regards transforming quality of teaching and learning, for example, it has worked on strategies like creating mechanisms of recruiting and retaining outstanding staff and implementing joint appointment policy. On top this; the plan has outlined targets which the university has intended to achieve. These include: realizing staff qualification mix of PhD to master’s to bachelor’s degree ratio of 20:50:30 by 2014 and 25:60:15 by 2016, etc.

A guiding concern in all the mentioned strategies and targets above is meeting a standard or standards of a higher education teacher. These strategies and targets will constitute remarkable achievements if they are implemented as legislated. Furthermore, it should be born in mind that the notion of quality is socially, institutionally and culturally marked and, therefore, not always understood by all partners in the same way. As the education and training activities of these institutions, the university and the college, are not value-neutral, the understanding and practice of quality standards must take this factor into account too (COE,2007). Hence, it can be concluded from the interviews and from the implied intents that there was input standard or criterion, as far as the professional standing of academic staff
is concerned, meant for academic staff recruitment purpose. The result of the study was in consonant with the report of Ashcroft (2003) which argued that most HEI in Ethiopia had set out minimum standards for the qualification of academic staff.

In each of these cases, we need to question such a pressure that could challenge and distort the strategic intent of the college and the university as well. Because, as implied in the quotations, in spite of the pressure from a different source, institutions or subject departments could have established good practice that would stand up, at least, to minimum standard scrutiny (Akalewold, 2008). On the whole, in spite of the predominant difficulties and problems (internal and external) the departments have faced in their efforts to maintain quality input standards, the discussions made so far have explicitly pointed out a sign of strength regarding the existence of minimum input standard operating procedures in the college.

**Process standards**

The process aspect of an education system has several dimensions: The transactions in classrooms, laboratories and workshops are hardly subjected to direct quality check. Teaching/learning is assessed indirectly through student assessment of their lecturers and performance of students at the end of the course. During accreditation visits, accreditors are expected to sit in live classrooms or observe laboratory work in progress. This cross-sectional view is the best that can be achieved in any circumstance. The table that follows pulled together subjects reports on the extent that appropriate quality assurance practices, mainly process focused, are presently in existence in the college under investigation.

**Table 2: Rating on process standards**

<table>
<thead>
<tr>
<th>S N</th>
<th>Performance indicators</th>
<th>Students</th>
<th>Instructors</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean N</td>
<td>Std. Dev.</td>
<td>Mean N</td>
</tr>
<tr>
<td>1.</td>
<td>Departmental self-review</td>
<td>3.40 12</td>
<td>1.265</td>
<td>3.60 18</td>
</tr>
<tr>
<td>2.</td>
<td>Program assessment by external international or professional</td>
<td>3.60 12</td>
<td>1.265</td>
<td>3.90 18</td>
</tr>
<tr>
<td>3.</td>
<td>Association regularly reviews the teaching assess agri and</td>
<td>3.20 12</td>
<td>1.229</td>
<td>3.50 18</td>
</tr>
<tr>
<td>4.</td>
<td>Curriculum is updated regularly</td>
<td>3.70 12</td>
<td>.823</td>
<td>3.10 18</td>
</tr>
<tr>
<td>5.</td>
<td>Dept. assess how a lesson or subject mastery is assessed</td>
<td>4.00 12</td>
<td>.943</td>
<td>3.80 18</td>
</tr>
<tr>
<td>6.</td>
<td>Dept. assess academic standard using external reference points</td>
<td>3.80 12</td>
<td>.789</td>
<td>3.90 18</td>
</tr>
<tr>
<td>8.</td>
<td>Dept. assess generic requirements like meeting standard contact</td>
<td>3.70 12</td>
<td>.823</td>
<td>3.50 18</td>
</tr>
<tr>
<td>9.</td>
<td>Prepares annual report</td>
<td>4.00 12</td>
<td>.667</td>
<td>3.80 18</td>
</tr>
<tr>
<td>10.</td>
<td>assesses the motivation of the department for improvement</td>
<td>3.50 12</td>
<td>.707</td>
<td>3.50 18</td>
</tr>
<tr>
<td>11.</td>
<td>assesses the rate at which students are introduced to new</td>
<td>3.60 12</td>
<td>.843</td>
<td>3.20 18</td>
</tr>
</tbody>
</table>
As can be seen in Table 2 above, the mean scores for the majority of the process sub dimensions listed, except item 4,11,16-20, 22-24 and 30, lay above 3.5 for both categories of respondents. This means, the existing image of process focused quality assurance mechanisms in the college such as departmental self-review, external examination of programs and departmental student assessment mechanisms, student -lecturer evaluation, assessment of students’ completion rate, follow up activities in connection to implementing the spirit of benchmark statements and norms of professional associations and annual reporting was vivid and significant. The numeric scale score averages have reflected overall strength.

The interviews made with different groups of respondents also revealed results in support of the evidence given above. For instance, the student representatives explained the issue as follows: “There is evaluation of teachers in every department. Students know whom they are evaluating. When they have problems they will come through their representatives to deal with the problems. Evaluation paper will be given to some students, they will tell us about the teacher. All sorts of questions are there. Feedback will be given to the teacher. Then it will be sent to the dean.”

As one department head pointed out, also, their department will have a meeting once in a year. They usually call students and some teachers to attend the meeting. This kind of situation has given them an opportunity to look into their strengths and weaknesses. Finally he remarked that, the system itself is inviting for this kind of communication.

In the same way, the project document for implementing the horticulture program at different levels (certificate, diploma, undergraduate and post graduate) outlined a series of activities to be carried out at different times in developing and revising courses and course materials for the curriculum. It clearly set procedures and time table for all kinds of curricular activities and related issues. It is interesting to see the way how the principal activities (as targets) are sequentially organized and scheduled in the document. It favors need assessment and regular internal and external review of the curriculum and the entire program as well.

Contrarily to these developments, instructors reported that they were not certain about execution of activities related to assessment of the rate at which students are introduced to new concepts and skills and curriculum regular update (Mean scores, 3.10 and 3.20).Their stand was also found to be significantly different from the student respondents’ opinion (.008 and .004, where in both cases p<.05).

Similarly, both group of the respondents, students and instructors, were also found to be doubtful about issues again related with external review. Specifically, as regards instances of observations of
classroom teaching and laboratory work by external reviewers or review carried out by an independent panel (3.10, 3.40; 3.40, 3.10; and 3.30, 3.20 respectively). In two of the cases it has been observed that there was significant difference of opinion between the respondents (.021 and .013, in either case p<.05). Although we did not deny such a difference of views, the difference still was within the realm of respondents doubt about the practice of external review in the college. It didn’t justify any sort of reliable agreement as far as the execution of the case in point.

Regrettably, in responding to an interview question on whether there is any external review mechanism, one Head of Department expressed that this external review process seems to have been completely absent in the college. He stated that the department doesn’t have such a system. Likewise, another Head of Department, in responding to a similar interview question responded that:” In all departments of the college, we do not invite external examiner .Only the School of Veterinary Medicine does this frequently.”

Hence, at this juncture one can possibly conclude that only two academic units, Department of Horticulture and School of Veterinary Medicine, were regularly and favorably reviewed by an external body or team of experts.

In this connection, the strategic document of the university (JU, 2010), has also envisaged a strategy to create reliable internal system for quality and relevance enhancement of the programs. It has targeted to conduct internal program assessment every three years and assess all graduates by internal & external examiner to meet the national qualification frameworks starting from 2012. This discourse upon external review further strengthened the view that external review mechanisms were not in place in majority of the subject departments and colleges within the university except in very few departments. Generally, absence of external review practice in the college could lead to question whether departments have a system of regular, holistic assessment by a course team of the strengths and weaknesses of the course involving the collection and analysis of a variety of data (Ashcroft, 2003).

As it has been indicated above, for instance, the Department of Horticulture has used peer evaluation as one of the mechanisms of evaluating instructors teaching performance. In the first case, however, the source of the uncertainty could be newness of the experiences, mentoring and lecture videotaping, to the departments or the college community (Ashcroft, 2003).

Concerning reporting and support systems, the data showed that in some cases either the instructors or the students were found to be doubtful about the utilization of these reporting and support mechanisms. For example, instructors were not reasonably sure about instances such as department report will be made available to all staff and students in the University, a year after the report’s production, there is follow-up and checking of it by the School or Department, assessing the extent that the department provides help and support to all staff, submitting internal teaching reports to quality assurance office annually, assessing the department’s effort to produce leading-edge multimedia and assessing that the department is involved with technical and educational research(mean score : 3.10,3.00,3.20,3.40,3.40,and 3.20 to each instance respectively). Their perception was
also found to be significantly different from the students’ perception in the five instances except in the first instance (p<.05 where p equals to .001, .000, .006, .006, and .000).

Likewise, some of the student respondents, in writing problems they have observed in respect of effecting quality assurance mechanisms, pointed out that there was no frequent meeting to discuss issues on quality of teaching and learning process.

The Strategic Plan of the university (JU, 2010), in this line, has identified poor planning and evaluation and weak research performance as major short falls, among others, of the university. The document further stated that generally there is lack of seriousness in planning and systematic monitoring of progress as well as evaluation of institutional performance. In addition, the number and quality of research conducted in the University are not up to the expectation due to limited number of experienced and senior staff and inadequate funding as well as necessary facilities. There is gap in accountability and reporting.

In addition, observation informs us that the intention of departments to put the mentioned applications in to practice was questionable. There were no planned and systematic gatherings meant for reporting assessment results of departmental or institutional performance annually or biannually. There were also no meaningful efforts to arrange opportunities for the staff to critically reflect on quality issues at department and college level. What is generic is representative participation in the University Senate.

In spite of all these, however, the strategic plan envisaged to create independent quality and relevance controlling unit in each college that evaluates the quality of teaching and learning process, starting from 2011. To this effect, it has also targeted to develop quality assurance policy, guidelines, indicators, methods of assessment and formats for follow up by the same year.

But, if we closely look at the project manual intended for reforming the Department of Horticulture in the respective college, it has contained a lot of self-appraisal elements. Remarkably, the project document could be taken as a model as anybody could get a beautiful idea of how quality assurance mechanisms were systematically incorporated and scheduled in order to maintain and sustain quality horticulture and floriculture education and training at different levels, certificate to MSc level. It has given due attention to stakeholders, internal and external, such as students, academic and administrative staff, experts in partner ministries and universities. At any phase of the project we observe staff (academic and administrative) support training schemes meant for updating the staff competence in land or abroad.

In the same way, when we look at departments’ effort to assess the extent of individual staff support and student one to one consultation they have delivered, it seems that this function was constrained by lack of capacity in addition to the newness of the support-individualized support. Otherwise, as has been mentioned in the interview responses, there was vivid student consultation system in each and every department. Moreover, as explained by one of the department heads, instructors were offered with short and long term professional development training opportunities.
In this regard, it seems commendable to emphasize that need or impact assessment responsibilities were not pushed down to the departments. Such kinds of responsibilities, as indicated above, were usually carried out at the university level. Moreover, the assessment regularity is indeterminate, oftentimes determined when a university-wide problem demands investigation and resolution by a visitor, an external body or MoE.

**Outcome standards**

The achievement of appropriate outcomes is the point of higher education, and therefore their measurement and monitoring systems are most important. Outcome standards refer particularly to the standards that students achieve and the extent that these are comparable across subjects and with higher education institutions in other countries. In this respect experience of the college or the departments within in employing outcome standards has been presented in the following table.

As the table below illustrates, the mean scores for the majority of the outcome sub dimensions listed, except items 2,5,6,10,11,13-15,25 and 26, lay above 3.5 for both categories of respondents. This means, the existing image of employing outcome focused quality assurance mechanisms in the college such as assessment of students fulfilling requirements of the course, ensuring students’ qualification meet or exceed a quality benchmark, ensuring that a course leading to a qualification meets assessing first year failure rates and students’ pass through rates, assessing the extent that the department offers Teaching Excellence Awards, ensuring views and expectations of alumni(graduates) are regularly solicited, assessment of student examinations for compliance with : curriculum content, course objectives, general professional standards and global standards; use of internal examiner from another department in the university or from another university, scrutiny by a departmental panel of examination papers, moderation panels looking at assessment of student work overall, an automatic right for all students to have their marked work returned to them, published marking criteria, internal standardization of examination answers was substantially significant.

The mean score averages have reflected overall strength. Interview responses from some of the department heads and the student representatives validate this achievement. Furthermore, almost all interviewees have explained that there was what they called it published criteria or fixed scale against which all instructors in the college are obliged to grade students’ achievement scores.

In contrast, concerning the practice of conducting outcome review, ensuring that recognized qualifications meet or exceed a specified quality, comparing standards across subjects and with higher education institutions, ensuring also outcome standards refer particular standards that students ought to achieve, boards of examiners function at both department and/or college levels, and peer reviewing of examination items set, the data in the table 5 showed that the instructors were found to be skeptical about the utilization of these outcome standards in an effective way (mean scores: 3.10,3.00,3.30,3.40,3.20, and 3.30, to each case respectively). Their perception was also found to be significantly different from the students’ perception in the four cases excluding the third and the fourth (p<.05 where p equals to : .021.034.003, and.002 respectively).
Table 3: Rating on outcome standards

<table>
<thead>
<tr>
<th>N/S</th>
<th>Performance indicators</th>
<th>Students</th>
<th>Respondents</th>
<th>Test Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dept. assess students fulfilling requirements of the course</td>
<td>3.70</td>
<td>12</td>
<td>.823</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.80</td>
<td>18</td>
<td>.984</td>
</tr>
<tr>
<td>2.</td>
<td>Conduct outcome review</td>
<td>3.70</td>
<td>12</td>
<td>.949</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.10</td>
<td>18</td>
<td>.718</td>
</tr>
<tr>
<td>3.</td>
<td>Ensures recognized qualification meet or exceed a quality</td>
<td>3.40</td>
<td>12</td>
<td>.843</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.60</td>
<td>18</td>
<td>.503</td>
</tr>
<tr>
<td>4.</td>
<td>Ensures that a course leading to a qualification meets</td>
<td>3.80</td>
<td>12</td>
<td>.632</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.50</td>
<td>18</td>
<td>.513</td>
</tr>
<tr>
<td>5.</td>
<td>Ensures that recognized qualifications meet or exceed a quality</td>
<td>3.60</td>
<td>12</td>
<td>.966</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.20</td>
<td>18</td>
<td>.795</td>
</tr>
<tr>
<td>6.</td>
<td>assesses a clearer picture to employers of what they can expect</td>
<td>3.10</td>
<td>12</td>
<td>1.197</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.60</td>
<td>18</td>
<td>1.23</td>
</tr>
<tr>
<td>7.</td>
<td>assesses first year failure rates</td>
<td>4.00</td>
<td>12</td>
<td>.816</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.20</td>
<td>18</td>
<td>.616</td>
</tr>
<tr>
<td>8.</td>
<td>assessing students’ pass through rates</td>
<td>3.70</td>
<td>12</td>
<td>.949</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.40</td>
<td>18</td>
<td>.616</td>
</tr>
<tr>
<td>9.</td>
<td>assesses the extent that the department offers Teaching</td>
<td>3.50</td>
<td>12</td>
<td>1.434</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.60</td>
<td>18</td>
<td>.821</td>
</tr>
<tr>
<td>10.</td>
<td>comparing standards across subjects and with higher education</td>
<td>3.90</td>
<td>12</td>
<td>.316</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.30</td>
<td>18</td>
<td>.470</td>
</tr>
<tr>
<td>11.</td>
<td>outcome standards refer particularly standards that student ought</td>
<td>3.80</td>
<td>12</td>
<td>.789</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.40</td>
<td>18</td>
<td>.940</td>
</tr>
<tr>
<td>12.</td>
<td>views and expectations of alumni(graduates) are regularly</td>
<td>3.80</td>
<td>12</td>
<td>.632</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.90</td>
<td>18</td>
<td>.308</td>
</tr>
<tr>
<td>13.</td>
<td>External examiner scrutinizes examination papers</td>
<td>3.20</td>
<td>12</td>
<td>.919</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.00</td>
<td>18</td>
<td>.459</td>
</tr>
<tr>
<td>14.</td>
<td>The external examiner also reviews marked scripts and curriculum content</td>
<td>3.00</td>
<td>12</td>
<td>.471</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.60</td>
<td>18</td>
<td>.503</td>
</tr>
<tr>
<td>15.</td>
<td>course objectives</td>
<td>3.40</td>
<td>12</td>
<td>.966</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.70</td>
<td>18</td>
<td>.657</td>
</tr>
<tr>
<td>16.</td>
<td></td>
<td>3.70</td>
<td>12</td>
<td>.949</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.80</td>
<td>18</td>
<td>.410</td>
</tr>
</tbody>
</table>

Similarly, the student respondents have declared their reservation in respect of departments’ attempt in giving a clearer picture to employers of what they can expect from a graduate; external examiner scrutiny of examination papers, review of marked scripts and comments on the general results; and internal examiner’s assessment of exam items against curriculum content (mean scores: 3.10, 3.20, 3.00, and 3.40 to each case respectively). Their stand was also found to be significantly different from the instructors’ stand in the three cases excluding the first (p<.05 where p equals to: .000, .002, and .000, respectively).

In most cases issues of external and internal examiner have appeared to be of great concern not only to the two groups of respondents but also the situation is glaringly evident when we look into explanations forwarded by Heads of Departments to few leading interview questions which they were presented with. They indicated that they do not have that system. Their best indicators are their students and tracer study. They usually ask some of their graduates and they will tell them what problems they have encountered and what unique opportunities they had. In seminars and curriculum review sessions also employers and others will tell them about their weaknesses. Besides, there is no moderation. This will be done when they are having research work. Concerning external
examination, all departments do not invite external examiner only School of Veterinary Medicine does so. There is an internal committee/exam committee. It works on coding system. The committee is also mandated to see quality of exam items but this kind of responsibility is not so far implemented due to: sheer weight of exam numbers; some other major commitments of members of the exam committee and the necessity of some kind of incentive for these committee members.

Even in the department of Horticulture and Plant Science there was no external examination practice except educational tour and experience sharing activities, according to the comment given by Head of the department in an exclusive interview with him.

By and large, the preceding discussions would seem to have proved that internal and external examination, peer review of exam items and moderation of results were not in use as tools of maintaining outcome standards by almost all of the departments in the college except that external examination exercise was found to be exclusive practice of the School of Veterinary Medicine. However, outcome review, though not systematized, was utilized in one way or another as a mechanism for soliciting feedback about graduates performance from employers and the graduate themselves.

This finding was consistent with the work of Ashcroft (2005).With regards to this issue Ashcroft argued that output standards are the backbone of any quality system. It seems to the author that the most urgent job for Ethiopian universities is to develop a system to assure standards at institutional level and a process whereby compliance at departmental and program level can be monitored. Such a system might include requirements for double marking; moderation meetings; published marking criteria; external examination; an automatic right for all students to have their marked work returned to them and to request their work to be double marked by an external examiner. What is missing is a systemization of such practices across an institution.

Conclusions and Recommendations

Conclusions

Based on the analysis and discussion made a number of important conclusions can be drawn.

- If higher education is viewed as a system, then any quality management program must, hence, assess inputs, process and outputs against predetermined quality assurance requirements – quality indicators or standards. In line with this, in spite of the predominant difficulties and problems (internal and external) the departments have faced in their effort to maintain quality input standards, the finding of the study unraveled a sign of strength regarding the existence of minimum input standard operating procedures in the college.
- Process focused quality assurance mechanisms such as departmental self-review, external examination of programs and departmental student assessment mechanisms, student -lecturer evaluation, assessment of students’ completion rate, follow up activities in connection to implementing the spirit of benchmark statements and norms of professional associations and annual reporting were common practices among the different departments in the college.
In the context of the study, moreover, the existing image of employment of outcome focused quality assurance mechanisms in the college has demonstrated that outcome standards were noticeably in use. The study has reflected overall strength.

However, there was lack of seriousness in planning and systematic monitoring of progress as well as evaluation of institutional performance. The situation has created gap in accountability and reporting. Need or impact assessment responsibilities were not also pushed down to the departments. Furthermore, mentoring and lecture videotaping were impractical as methods of peer evaluation in all departments. Still further, internal and external examination(process and outcome), peer review of exam items and moderation of results were not in use as tools of maintaining outcome standards by almost all of the departments in the college except the School of Veterinary Medicine. These will spoil the whole good practice.

Overall, it is evident from the study that although no formal and autonomous organ responsible for assuring quality and relevance at the College, there were several good procedures and practices that function as quality standards. These can be seen either at the stage of input, process and output or at instruction, program and institutional level. This study showed that most of the academic units place emphasis on processes and mechanisms for monitoring the quality of teaching and learning rather than putting together policies in the form of documents. As a consequence, the actual practices to some extent vary from department to department. In this context, though the existence of such good practices can be taken as important instances, the challenge ahead will be as to how to use this as a stepping stone for developing a coherent plan of ascertaining quality of services in the college.

**Recommendations**

Thus, in support of the findings of the study the following are recommended.

- The study indicated that there was no significant amount of uniformity in terms of what departments usually do to enhance quality in teaching and learning, over and above, vital requirements like having in place minimum recommended reading materials for students, minimum credentials of staff handling particular courses, involvement of external stakeholders in quality assuring programs, peer evaluation, external and internal examination, etc., so that the actual practices to some extent vary from department to department. This situation justifies a need for a comprehensive policy framework and an overall quality assurance system at the College level. Therefore,
  - The college needs a comprehensive approach to quality assurance in order to ensure that all departments channel their quality care efforts into achieving the colleges’ vision and mission,
  - The College should have a quality assurance policy of its own to which all departments and schools have to conform. The policy is something that is written and which acts as guideline to the departments. This policy should spell out relevant standing orders and ordinances and provide guidance on how teaching and learning should be quality assured at the College.
The policy framework calls for efforts and smooth cooperation among the University management, the University Academic Programs and Quality Assurance office, all internal and external stakeholders, the College and the Departments. The framework must therefore offer a long-term perspective to all stakeholders involved and at the same time provide an immediate and medium term roadmap for joint and well-coordinated action.

Moreover, existing good practices, processes and transactions that occur in the college must be made more operational for quality assurance parallel to other incoming relevant input, process and output standards and procedures. Quality assurance standards might be developed based on available best practices, national or transnational.

In practice, the quality assurance services available at the departments in the College were fragmentary and lacking in coordination. This calls for the University’s firm stand to be committed in establishing Quality Care Unit, at the College, entrusted with supporting departments and schools in quality care matters. In this line, a matter which worth our attention is the importance of departments and schools as the main drivers of quality assuring teaching and learning activities in the college. Besides, such kind of commitment of the University gives the college greater autonomy over its own quality matters to respond more effectively to contingencies and local situations and be encouraged to develop plans and manage its own resources by designing strategies that support departments and schools and developing appropriate training programs with the involvement of all stakeholders-internal and external.

The University should assist the College in developing capacity (manpower, finance and material), provide technical assistance and control linkages as anticipated in its third generation Strategic Plan (2011-2015).

Quality assurance needs clear understanding of the principle (proper planning, implementation and evaluation, which have implications to assuring quality), the purpose, communicating the goals to be accomplished, and the methods by first line implementers-departments, staff, and student representatives. The existence of shared agenda and clarity among the college management and the implementers, moreover, facilitates quality assurance policy/guideline implementation. Therefore,

Orientation programs like conferences, workshops, and seminars should be organized to sensitize the college management, the departments, the staff and the student community in order to enhance the understanding of the principle and purpose of quality assurance and build strong support. The University Academic Programs and Quality Assurance office alone or in collaboration with other departments having quality assurance related specialty inside or outside the University could take this responsibility.

Quality advocacy through the university mass media, publications and public dialogue forums organized at university or college level can be used as a means to an
end. Then, feedback from discussions has to be used for formulation and implementation of effective quality assurance policy guidelines and standards.

- The study showed that external examination and peer evaluation exercises were found to be exclusive practices of the School of Veterinary Medicine and the Department of Horticulture and Plant Science respectively. On top of these, in the analysis and discussion section, horticulture curriculum has been cited as exemplary tool to maintain quality in the Department of Horticulture and Plant Science. These circumstances could be real causes for the college to concern itself with a need to identify examples of good practice that can inform quality assurance practices and policies within the College. In this regards, organizing experience sharing events that help different departments and schools to share good practices by the college management is commendable.

- Mentoring, lecture videotaping, student consultation and a system of student evaluation involving the student representative, through the Dean, or a meeting of students with the dean and assessing the extent of individual (staff or student) support were impractical as methods of quality assurance in all departments, may be due to their novelty to the setting. In connection to this a closer look at experiences of sister or partner universities (local or international) could be considered as an option. Likewise, benchmarking could also be a very limited option to be exploited, because it creates a partial picture that needs contextual interpretation. In either case, the college could adopt a lesson.

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References


Women Leadership and Equal Opportunity Theory and Practice at Addis Ababa University: A Curious Paradox

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Abstract

The purpose of this study was to explore characteristics of the theory and practice of equal opportunity in one particular social context – AAU, and causes and consequences of this practice on the share of women in academic and administrative leadership positions and its implications to the future. Critical research method was employed to study the problem. Feminist interview (Semi-structured) coupled with analysis of existing statistics and policy documents were also employed to elicit the required qualitative and quantitative data. Primary and secondary sources of data were used to generate necessary information. Purposive sampling was employed to select samples from the target population. A definite degree of selectivity was introduced in the sample with a view to ensuring coverage specifically suited the qualitative objective of the study. A thematic approach was followed to analyze and present interviews and documentary data and results. The themes are drawn from the variables contained in the conceptual framework of the study. Some statistical techniques such as percentages and frequency counts were used to analyze the quantitative data. The study unveiled that bureaucracy is the rule of administrative management in each college, institutions and academies. All employment related legal documents, new and old, included detailed rules and procedures dealing with recruitment, promotion, appointment, grievance and discipline, and demonstrate the legal practice, bureaucratization rather than politicization of decision making. Especially ironic in this situation is that the University’s legislative voice practically prevents women from being visible in the administrative and decision making positions. The results suggested that the higher the liberal and normative control concerns of the university management, and the more elite the organization’s status, the higher its educational, professional and research requirements. Thus, gender equality programs in liberal organizations such as AAU have no effect on female proportional representation in leadership and decision making positions. Statistical evidences clearly suggested that women academics, as traditionally disadvantaged groups, are still severely lagging behind in the share of leadership and decision making positions comparable to the predominant men academics. They have been urged to be in subordinate positions since the establishment of AAU. Lack of gender policy makes it difficult to develop and institutionalize gender friendly policies and practices in the university. To improve the situation, hence, a lot remains to be done in this institution in terms of translating government policies into practice. Thus, regular debates and gender analytic discourses are just as important as eating the right type of food. Nurturing gender equality and empowering women is one of the major national and constitutional responsibilities entrusted to AAU. Therefore, one fundamental way of overcoming the mentioned problems would be to consider gender policy.
Keywords: Women participation, higher education leadership, AAU

Introduction

The new managerialism in universities has resulted in increasing numbers of managerial roles within universities and this has provided opportunities for women to move into positions that previously did not exist. Unfortunately organizational cultures within these universities have not necessarily changed and the policies and practices despite equality rhetoric continue to favor certain groups over others (Fagenson, Ellen A., 1993).

In Ethiopia, due to various obstacles that women have, their representation and participation in leadership and decision making position has been limited. Despite the Government policies of equal opportunity for both men and women to participate in the democratization of the country, women have not been adequately represented at all levels of decision-making positions. In the area of employment, while the number of women in the Ethiopian civil service has been relatively small, the senior positions are overwhelmingly held by men (Meron, 2003). In this regard, there is no exception to the rule when it comes to their participation in higher education leadership.

Ethiopian women although their contribution in economic, social, and political spheres is considerable, the existing situation does not endorse this idea. Firstly, the number of women with high level of education is very low. Secondly, among these educated women very few are appointed in decisively high positions in universities. In this regard, some tertiary universities in our country are typically good examples for not having role models among women academics at the senior level decision making and managerial posts. Likewise, the status of female staff in the administration section is at most in low status and low paying jobs. The universities administration has done almost nothing on the affirmative action for women academics and administrative staffs except on the affirmative action for female students (Yania, 2009; and Meskerem, 2008).

Addis Ababa University, the oldest and biggest higher education institution in the country, currently has over 20 colleges or faculties and 2196 academic staff. Female staffs constitute only 22.8% of the total academic staff. Similarly, women are under-represented as heads of departments and deans of faculties. Male faculty holds the top decision-making positions – president, vice-presidents, and most of the dean and director posts. Men hold almost all central administration positions in the University. A similar trend prevails in the administration wing of the University (Yania, 2008). So here, it is remarkable to note that, in a university where the first and the only university-based institute for teaching and conducting research on gender issues, CERTIWD, is established and instituted (IGS); the underrepresentation of women in managerial and decision making positions is a paradox. Virtuously, even, it is a disturbing and disputable fact.

What matters more here are the underlying beliefs/perspectives/paradigms regarding gender and leadership behaviors, rather than gender per se. Institutional bias and policy norms, may deny either those inequalities of power exist or that such inequalities are unjust. These institutional beliefs and values play significant role in legitimizing inequality. These beliefs influence women’s opportunities for career advancement including managerial selection, promotion, and placement and training.
decisions (Worku, Y. 2000). And women tend to receive less favorable or prejudicial evaluations. In these kinds of institutions there is also some evidence of professional harassment of women candidates for recruitment and promotion due to the open hostility to feminism among some senior academics.

Second, not all institutional policies (recruitment, selection, allocation, promotion and appointment related), that appear to be equity enhancing will in fact have positive effects. In the presence of labor market discrimination, equal opportunity policies can improve labor market efficiency as well as reduce inequality by increasing the incentives of minority workers such as women. However, with imperfectly informed regulators, it is practically known that, officials (employers) will attempt to evade equal opportunity restrictions (Witz, Anne,1992). Hence, it is of great benefit if equal opportunity policies are well intentioned and well informed. Well-focused policies can advance both efficiency and equity. Well-intentioned, but improperly focused, policies, on the other hand, may be implemented in such a way that the completely strategic attempt be ineffective or even reinforce negative outcomes.

Third, even if an institution proclaims equal opportunity policy, the policy is only as good as those officials and academics charged with implementing it. It has to be accompanied by “teeth”. Meaning, the endeavor needs to be backed by resources, commitment by senior academics including incentives to put the policy in to effect (Amrot Tadesse,1998).

On the whole, a cursory look at the course of the play at AAU reveals that, although, pursuing equal opportunity is among the most notable and important endeavors of the university; this endeavor faces a series of theoretical and practical challenges. These challenges are closely interrelated, and that neither the theoretical nor the practical challenges can be met without an eye toward the other. At this point, therefore, there is a need to examine organizational characteristics and philosophical support for gender equality as predictors of both the presence of substantive human resource management programs and proportional representation of women in the university management positions. To this effect, the following basic questions will be addressed:

- What kind of equal opportunity philosophy does the university adhere?
- Which notions of fairness and justice are enshrined in the rules and regulations of the formal policy (legislation, employment, etc.) of this institution?
- What are the mechanisms frequently employed by the university in order to put principles of equity and fairness in to operation?
- Has implementation of equal opportunity policies actually brought about fairness and justice, for instance, in relation to women representation in high and middle level decision-making positions?
- What are the shortcomings and consequences of these policies against gender segregation?
- What should be done in the future to overcome these deficiencies?

Materials and Methods
The overall purpose of this research work is exploring the theory and practice of equal opportunity policies at AAU, with special emphasis on women academics share in leadership and decision-making positions in the university. Accordingly, the conclusions are not to be extended beyond this university and the core concerns of the study mentioned above.

According to Bowles & Klein (1993), Feminists prefer qualitative methodology to examine concepts of patriarchy, sex/gender distinction and sexism. As all these concepts were discussed in this research, qualitative design was extensively used in the study. However, it was feasible or even desirable to present some of the results quantitatively; hoping that using qualitative and quantitative techniques for analysis of data could strengthen the analysis.

Critical research method was employed to study the problem. According to Kecmanovic (2010) in Mihret(2007), critical research methodology involves; intensive or in-depth examination of local situations and issues affecting real people, their working conditions and their organizations; it offers critical explanation to advocate social change more assertively. Moreover, the critical approach, allows incorporation of the researcher’s personal feelings and experiences in to the research process.

**Data Collection Techniques**

Interview (structured) coupled with analysis of existing statistics and policy documents will be employed to elicit the required data. Besides, observation and personal experience will be used as supplementary devices. Such a mix of evidence is consistent with the critical science approach and feminist social science research.

**Sources of Data**

The necessary information was collected from primary and secondary sources of data. Officials from Gender Office, Human Resource Department, Institute of Gender Studies ( one from each ) and a woman academic staff who had formerly been an officer were used as primary sources of information. The University legislation, recruitment and selection guidelines, the university human resources statistics and other relevant written materials were reviewed as secondary sources of data.

**Sampling strategies**

Purposive (judgmental) sampling was employed to select samples from the target population. Meaning, a definite degree of selectivity was introduced in the sample with a view to ensuring coverage specifically suited the qualitative nature of the study.

**Techniques of data analysis**

The data collected through different instruments will be analyzed based on the nature of the instruments. Interview and observation results were presented by aggregating the responses under different major themes. Data from the document analysis was partially analyzed quantitatively using descriptive statistics such as frequency and percentage. In addition, content analysis was employed for examining trends and patterns, and to generate themes, relationships and concept maps across the documents.
Results and Discussions

Women academics in the university’s administrative structure

As it has been indicated at the very outset, the purpose of this study is to examine the influence of substantive human resource development polices, especially equal opportunity polices on increasing gender equality within the managerial ranks of Addis Ababa University. More specifically, the current study is concerned with the experience of those relatively few women academics that have in fact entered the university. Do they have the same chances of being selected for jobs and leadership positions as men academics? Do they have the same promotion opportunities and prospects as men? What positions and jobs does the university regard suitable or unsuitable for women academics? Does their recent/present attainment of top and middle level administrative positions attest their proportional representation as per their population? Does the university employment policy promote women academics equality in the leadership positions? If so, which equal opportunity philosophical ideal better explains the recruitment, promotion and appointment practices in the university? These are some of the main questions on which data were collected.

Personnel records/ information were taken from the Human Resource Department of the university. In addition interviews were conducted with few officials, who currently accomplish gender and employment related tasks, concerning the personnel and equal opportunity policies and practices in the university. For further scrutiny, moreover, legal and policy relevant documents were critically reviewed.

In the following table, an attempt is made to portray positional distribution of women academics in the university’s administrative structure.

Table 1: Proportional representation of women academics in Leadership positions

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<tbody>
<tr>
<td></td>
<td>PR*</td>
<td>NP*</td>
<td>OP*</td>
<td>PR*</td>
</tr>
<tr>
<td>Department Headship</td>
<td>11</td>
<td>79</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Assistant/ Associate Deanship</td>
<td>5</td>
<td>31</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Deanship</td>
<td>2</td>
<td>14</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Directorship</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Presidential or Central Administrative</td>
<td>4</td>
<td>25</td>
<td>1</td>
<td>3</td>
</tr>
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</table>


N.B. PR* = Expected proportional representation
     NP* = Number of positions
OP* = Occupied positions

The table vividly displays number of positions, expected proportional attainment and occupied positions by women.

The proportional representation of women was calculated using the following formula.

Proportional representation = \( \frac{\text{Number of women academics} \times \text{Number of positions}}{\text{Total population of women staff}} \)

As can be seen in the table, from 2005/2006 - 2008/2009 women were not entirely attained deanship positions. There are evidences of overrepresentation of women in the directorship positions from 2005/2006-2007/2008, despite the fact that the accurate population of women staffs in the university is questionable in giving statistically accurate results while calculating PR (proportional representation). But, women representation continued to be a reality in directorship positions also in the year 2008/2009. Throughout the sampled academic years, on the other hand, women were critically under-represented in the assistant deanship positions.

Similar trend is also observable in the presidential and central administrative positions. In all academic years, 2005/2006-2008/2009, women academics were seriously under-represented in the presidential and central administration positions; and in the department headship positions as well.

Supportive evidence was captured in interviews. For example, a female interviewee, from AAU Gender Office, was very impressed by the state of affair in the university and complained that “the university had no gender policy.” She believed that if the university have had a gender sensitive policy and had taken an active role in promoting and appointing women academics, a lot of senior management positions would have been attained by women.

Table 2. AAU Academic Staff by Sex and Academic Rank (01/08/02-30/10/02.E.C.)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Professor</th>
<th>Associate Professor</th>
<th>Assistant Professor</th>
<th>Lecturer</th>
<th>Assistant Lecturer</th>
<th>Graduate Assistant</th>
<th>Library Assistant</th>
<th>Technical Assistant</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>39</td>
<td>127</td>
<td>366</td>
<td>653</td>
<td>160</td>
<td>54</td>
<td>25</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>95.1%</td>
<td>95.5%</td>
<td>92.4%</td>
<td>88.6%</td>
<td>84.7%</td>
<td>74%</td>
<td>86.2%</td>
<td>77.1%</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>6</td>
<td>30</td>
<td>84</td>
<td>9</td>
<td>19</td>
<td>4</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>4.9%</td>
<td>4.5%</td>
<td>7.6%</td>
<td>11.4%</td>
<td>15.3%</td>
<td>26%</td>
<td>13.8%</td>
<td>22.9%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>133</td>
<td>396</td>
<td>737</td>
<td>189</td>
<td>73</td>
<td>29</td>
<td>118</td>
<td></td>
</tr>
</tbody>
</table>

Source: AAU Human Resource Department

If someone looks at the table, he/she immediately recognizes that, the higher the rank the lower the number and percentage of women and the greater the number and percentage of men academics. In
addition, table 2 illustrates that women academics are less qualified than their male counterparts. For instance, as can be seen in this table, women deserve only 7.6% of the Assistant professorship title.

In the following discussion, the writer will explore the realities and conceptions of equal opportunity policies in the university with respect to each of the dimensions and the espoused ideological approaches to sex equality identified in the literature.

**Principles of equal opportunity policies**

The prevalence of one or the other ideology in the university is illustrated by various events. At a first glance, a common theme of responses of informants pledges a fit to one dominant perspective. An interviewee from personnel department, for instance, asserted that the university, even though, it is assumed to be autonomous; it doesn’t have its own recruitment and promotion policy. It normally uses rules and regulations of Civil Service Commission. The commission’s regulations do not favor women, in any form of its application, in employment or promotion. Even, the university’s legislation, which states detailed rules and procedures of academic staff recruitment, and promotion, doesn’t endorse special treatment for women academic or administrative staffs during employment and promotion. He didn’t hesitate to ascertain that the recruitment and promotion practices in the university are fair and justifiable.

Here, it is of paramount importance to recognize that the civil service is based on reasonably impartial selection procedures and formalized pay scales, thereby causing male-female treatment differentials to be minimal or nonexistent.

Likewise, in an assessment of a newly enacted recruitment and assignment guideline for administrative staff (AAU,2009) , it was found that the recruitment and assignment procedures emphasize the utmost relevance of educational qualification(60%), experience(20%), training(10%), efficiency(15%), conduct(15%), and if necessary written and oral examination. The formal procedures are gender neutral.

The evidence from the University’s Senate legislation also points to some fundamental features and norms involved in academic promotion and related social relations involved in gender. The legislation enunciates criteria for and principles governing promotion as follows: “ The length of service within a given rank, effectiveness in teaching or research and publication , participation in the affairs of the University, and public and professional service rendered in various capacities shall be the basic criteria on the basis of which promotion is determined” (AAU,2007).

The components of the requirements that have to be met to fulfill each of these criteria and the manner in which these are assessed are vividly formalized. For instance, effectiveness in teaching or research of an academic staff is a function of his/her talent and ability but not gender. For the purpose of measuring such an ability or talent of an academic staff, regardless of his or her sex, the weighted average of students, colleagues, department heads or directors evaluation will be considered. Besides , publication of a book, an article or articles in reputable journals , preparation of teaching materials are
mandatory requirements for academic promotion. An extraction from the Senate Legislation will better portray the issue:

…demonstrating professional and creative talent is a mandatory requirement for promotion to the rank of assistant professor, associate professor or professor. Furthermore, publications and production of realized pieces of work or projects considered for promotion shall be the outcome of continuous research effort focusing on one’s area of specialization. (AAU, 2007).

On its home page, under the topic “Policy on Faculty Productivity and Promotion” (Retrieved from http://www.aau.edu.et), the University affirmed that the operating principles that dictate the promotion and advancement scheme of the University are: merit, positive reinforcement, fairness, appropriateness and efficiency. As regards fairness, the policy document sketches the following statements:

All academic staff shall be treated fairly and equally. AAU is an equally opportunity institution that prohibits discrimination or favoritism on the basis of gender, national origin, religion and other non-academic biases.

Furthermore, the policy declares that an equitable and merit-based system of recognitions and rewards is worthwhile both to the university and to the individual faculty member. Accordingly, academic staff members who have distinguished themselves in teaching, research and community service are identified and awarded prizes. Individuals, talent, ability, efficiency (merit), are placed at the center of the policy frame work.

Evidence from the University Wide Strategic Plan also supports the meritocracy agenda of the university policy. The plan grants to institutions a duty to present merit and performance based salary scale proposal for approval by the University Board (AAU, 2008).

Discussions
Emergent Issues and Concerns in AAU’s management

The research uncovered a serious under-estimation or under-representation of women academics in the majority of top (presidential and central administrative), middle level (deanship and assistant deanship) and lower level (department headship) management positions. This fact was also evidenced in the legal documents of the university. For instance, the scenario was expounded in the 2008-2013 university wide strategic plan as one of the major weaknesses of the university. The strategic plan portrays this issue as gender inequality with regard to access, academic staff positions, and managerial staff positions and inadequate participation of the university community in decision making (AAU, 2008).

Webster(2010) found that the majority of senior management in African higher institutions are men, even in institutions where women constitute 50% of the academic staff. This type of managerial composition may be self-perpetuating; and occurs due to lack of gender sensitive policies in the
institutions. In this regard the quantitative and qualitative results provide indications that gender-based assessment of leadership creates a tilt that works against women.

In the light of the statistical data shown in table 2 on women’s academic careers and ranks, it is no doubt tempting to conclude that the “patriarchy” model of occupational feminization provides a pretty convincing interpretative framework for the situation of women academics in the university. It is undoubtedly true that all women academics are victims of the effects of patriarchal stereotypes and that their academic careers are less “successful” than those of their male counterparts. This implies that women academics do not have the prospect and the chances to attain top and middle level academic positions in organizations where meritocracy is a predominant philosophy.

On the basis of the information delivered in the table 2, it is possible also to draw a firm conclusion; women publish less often than men and occupy the lowest academic ranks (HRM, 2009). This is because, as one interviewee explained, many women academics do not have the time and the enthusiasm to conduct research. This is due to home and social assignments they have in addition to their teaching task. They are married and are primary care givers for children. They cannot leave their children for a long period of time. This situation compels them not to pursue their studies and their career prospects elsewhere. Teaching responsibilities and ability alone are commonly not considered for the purpose of promotion in the university. Thus the lack of recognition for some key functions where women usually tend to cluster leads to the fact that there are very few women in top management and decision making posts. This indicates that there is not significant number of women PhD holders. Hence, they are unable to access senior management and administrative positions. Besides, the statistical data on the under-representation of women in Grade A academic positions demonstrate the persistence of male-oriented criteria for professional promotion and recognition.

Anker and Hein in Yania (2008) argued that discrimination against women may manifest itself in many ways. For example, women may constitute a much smaller proportion of those employed than men; or women may be concentrated in jobs with low pay, poor career prospects and poor working conditions. In fact, the first state of affair does not in itself prove the existence of discrimination in promotion or recruitment in so far as, for various reasons, a smaller proportion of women academics may hold top and middle level administrative positions or occupy higher academic ranks. However, women academics may in general possess lower educational and professional qualifications, as shown in table 1 and 2, or they may not offer themselves ranks, titles and positions because of social beliefs and taboos concerning their roles in society. No doubt such beliefs and attitudes are themselves products of discrimination on the part of society.

It might be argued, based on the available evidence in the legislation and the policy documents, that there is no a priori determination of the number of status groups such as women or there is no consensus on a rank order share among men and women academics stated in advance in the university promotion principle. The absence of a priori determination and consensus on sex role and the conditions under which educational, professional and research requirements set for promotion purpose fits a spirit of an ideology or an approach pursued by the university.
The statistical indicators of positions attained, academic ranks and the legislative and policy provisions for equality in the university suggest that the liberal approach was the prevailing ideology of sex equality for this institution. Liberal equal opportunity policies conceive ability and talents as individual attributes. They also assume that individual talent / ability will enable the best person to win, and permit, more generally, all individuals to make the best of them. Hence, the normal operation of competition among candidates for a position or rank in a given institution generates a random distribution of gender within the occupational hierarchy. It follows then the institutions or policy makers’ role is providing organizational citizenship rights as an irreducible social equality rights from which all individuals regardless of sex and ethnic origin compete on a fair basis and institutionalizing fair procedures in every aspect of work and employment (Jewson and Mason, 1974).

Gender based assessment of leadership in the university suggests that the liberal approach has been promoted by the university for a long period of time. The approach enjoyed little degrees of success in relation to striking proportional representation of women in leadership and decision making positions with anti-discriminatory action as its main tool for change. The Gender Office in the university has been also working with liberal principles to develop and implement policies regarding equality for women. Paradoxically, while their action signaled the belief that they do support radical feminism, their commentary belied this belief. For example, while speaking to me in an interview venue, a woman academic and an officer exposed her belief as she described the University promotion and appointment policy: “You know if a position requires MA or any other degree above MA, relevant educational qualification and merit should not be compromised. It is my personal feeling that merit should not be compromised”. Her belief can be viewed as a representative of post-feminism stands of very few women academics that have succeeded attaining middle or top managerial position. The post-feminist argument is that because women have achieved legal equality there simply is no further need for a feminist movement or agenda. That is, the emphasis on endorsed legal equality between men and women creates the impression that little now stands in the way of individual women, in a meritocratic way, achieving equality for them(Durbin and Fleetwood, in Meskerem , 2009).

Implementation of equal opportunity policy necessitates different mechanisms for the two conceptions of equal opportunity policies. In the liberal view implementation requires the bureaucratization of procedures and for the radicals it requires the politicization of decision making. In other words, for the liberals, devising and institutionalizing formal rules and regulations across all organizational units are the espoused mechanisms of achieving equal opportunity objectives. Hence, traditions, customs, personality, and favoritism in employment practices are subordinate to the discipline of formal rules and regulations. In contrast, for the radicals, politicization implies that employment decisions within an institution are not made according to formalized and procedural or technical criteria but rather in terms of the prosecution of a struggle for power and influence on the part of specific subordinate groups such as women. To realize this objective, therefore, employment, promotion and appointment decisions should not be guided by procedural details or legal technicalities. Instead employment, promotion and appointment should be taken as opportunities to advance the interest of the oppressed (Jewson and Mason, 1974).
It can be argued, here, that the higher the liberal and normative control concerns of the university management, and the more elite the organization’s status, the higher its educational, professional and research requirements. Thus, gender equality programs in liberal organizations such as AAU have no effect on female proportional representation in leadership and decision making positions. Statistical evidences clearly suggested that women academics, as traditionally disadvantaged groups, are still severely lagging behind in the share of leadership and decision making positions comparable to the predominant men academics. They have been urged to be in subordinate positions since the establishment of AAU. Lack of gender policy makes it difficult to develop and institutionalize gender friendly policies and practices in the university.

The Way Forward: Implication for policy and practice

On the one hand, making explicit to AAU decision and policy makers the nature, goal, effectiveness and ineffectiveness of approaches and policies of equal opportunity may help to raise the status of AAU women academics in the area of leadership. On the other hand, letting women in on the “culture of power “and helping them understand the rule of the game (the necessity of academic, professional and research competences) may also sustainably ease the predicament faced by them in attaining leadership positions. Nonetheless, decision makers may shy away from discussions of equal opportunity, believing that AAU’s “No Gender Policy” stand is against the spirit of National Women Policy, or with the fear that it is “trying to bring Beijing to the university”(HRDM,2009) or fearing such discussions will cause more harm than good.

Yet, as Ozbilign(2000) , and Rone-Smith and Kornberger(2007) pointed out that and the findings of this research confirm, the underlying liberal rationality functions( business case arguments) are mere “formality and cover up” that, in reality, hide the everyday legislated and gendered routines of this institution. Beside this fundamental critique, policy makers at AAU like the advocates of the business-case arguments were both overly reliant on meritocratic aspirations to academic and research excellence and naïve ( or not very conversant) about the discriminatory nature of merit based criteria. Thus, a discussion and analysis of the topic “basic assumptions, implications, and applications of approaches and polices of equal opportunity “in the light of institutional, regional and international research findings on gender and management would be appropriate, if not necessary, even for women academics and gender experts in the university.

At this point, it seems worthwhile to emphasize firm grounds on which the above recommendations are based.

1. Since AAU has aspired to be a pre-eminent African research university dedicated to excellence in teaching and critical inquiry, mapping philosophical assumptions, formulating analytical distinctions and unraveling contrasting arguments are all routine aspects of intellectual expertise. In addition, cognitive skills of this kind are not highly regarded outside the walls of higher education institutions like AAU. They are commonly used for academic curiosity (Jewson and Mason, 1985).
2. AAU Senate Legislation clearly expressed that the application of all its provisions is subject to the provision of relevant laws of the country (AAU, 2007). Likewise, apart from issuing National Women Policy and guaranteeing the rights of women in its national Constitution, the FDRE government has also ratified international conventions such as the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) in 1981 and made it part of the Ethiopia’s national law. Furthermore, the National Women Policy clearly stated that all institutions, regardless of their type, ought to modify or abolish existing laws, regulations, customs and practices which aggravates discrimination against women and facilitate conditions conductive to their participation in the decision making process at all levels (Meron, 2003). Hence, even if the FDRE government has given due emphasis to the issue of gender equality and its significant role in leadership and decision making at all levels, a lot remains to be done in this institution in terms of translating these policies into practice. Thus, regular debates and gender analytic discourses are just as important as eating the right type of food.

3. Though ironical, Institute of Gender Studies in AAU has more than a decade experience in assisting the Ethiopian government in the formulation of policies and programs that address the needs of women and remove barriers to their active participation in the development process (Embet, 2009). The satire will remind us one of our proverbs: “A fortuneteller often tells others’ fortune but not his own.” Therefore, in order to escape such blame and to be a role model, the recommended exercise would give it an opportunity to use its old hand.

In this connection, history reminds us successful experience of American women. Jacobs (1996) stated that American women’s access to institution of higher learning did not emerge because of the prescriptions of the captains of industry, but because women successfully demanded a place. This emerging situation, however, may be regarded as a necessary evil or threat to the present patriarchal ideology or male dominated leadership in the university, but in reality, it is not. Because, nurturing gender equality and empowering women is one of the major national and constitutional responsibilities entrusted to AAU. Viewed optimistically, there is one point I thought to be of political, moral and social importance to AAU management and the intellectual elite: “…it seems as though one goal must always be sacrificed in the projected interest of the other.’(Tyson in Panos, 2003).

From this and other studies (Jacobs, 1996), we know that women remain a minority of faculty and are disadvantaged in terms of rank and institutional prestige. Their entrance to faculty positions is so low and they are a small proportion of PhD recipients. The reasons for these may be many. In this line, although, the intention here is not to make very elaborated recommendations to AAU policy makers on how to change the prevailing situation of women academics in the university, these research results will be used to suggest certain minimum changes that would help to correct the disadvantaged position in which AAU women academics currently find themselves.

If such a disparity to be rectified, there will be a need for a rigorous and committed program over a prolonged period. The reasons underlying this disparity should be carefully analyzed, and steps taken to ensure that the issue is addressed in a practical way. Such inequalities are not to disappear without
policy transformation and strategic planning within the university. Therefore, one fundamental way of overcoming the mentioned problems would be to consider gender policy.

In fact, experience has shown that, there can be no simple panacea to change overnight the attitudes and prejudices of the university community regarding female roles, including their leadership status. However, the sheer enactment of such polices would be expected to at least discourage some blatant and subtle forms of sex discrimination widely practiced in the university.

By enlightening top, middle and line managers in the university on the true nature of affirmative action programs, AAU Gender Office and Institute of Gender Studies may be able to increase support for initiatives to increase gender equality in the management hierarchy.

Although this study presents useful evidence about the factors hindering gender equality in AAU management and some interesting findings in relation to equal opportunity theory and practice, it is not without limitations. One such limitation is the inability to include many research participants like the University President and a number of female instructors due to inaccessibility and shortage of time respectively. Future research using a modified design would complement the strengths and weaknesses of this study.

Acknowledgments

I am deeply grateful to Professor Endrias Eshete, former President of AAU for the official permission he granted me to conduct the study in the university and his tenderly welcome. My heartfelt gratitude also goes to Directors of AAU Gender Office, Human Resource Department and Institute of Gender Studies for the official permission they granted me to conduct the study in their respective department and institution and for their honest to goodness cooperation in providing me with crucial and valuable data required for the success of study.

References


Suspension as a Tool Modifying Disruptive Behavior in Public Universities

By

Ewnetu Hailu

Abstract

All universities use suspension as a tool modifying misbehavior, however there are many incidents that pauses question on the efficacy of suspension in the university. This study is therefore intended to explore students and university management’s perspective of suspension as tool modifying disruptive behavior and also to investigate the efficacy of suspension in restoring the damage. This study is conducted in four purposely selected universities: Jimma, Wellega, Adama and Hawasa. Student union, university police and university management and students on suspension and students who returned to the university after sometime on suspension were the participants of the study. Qualitative multi case study method is employed in which in depth interview and FGD and document analysis were used to collect data. The study conducted independently in all cases (universities) and brought together for ease presentation and help understanding of the issue. The major findings of this study are suspension is perceived as temporary relief for the managements, as damaging socially, economically and psychologically and expose them for more serious disruptive behavior like drug use and serious crime, there is no behavioral change on the returned students, rather practiced with more care and hidden. There is no practice as to link the suspended students with his or her family, the suspended students are forbidden to get into the university premises there seem nobody responsible for what happen to the student outside the university once s/he suspended.

Academic Staffs’ Perception of Effective Leadership Behavior: The Case of Jimma University

By

Tamiru Jote

Abstract

Around the world, scholars and administrators alike speak about leadership crisis in higher education. The search for solutions to the leadership dilemma leads us to thousands of leadership studies, most of which are contradictory of one another and inconclusive. Most of the leadership studies leave the impression that leadership works one way – leader influences the subordinate. Later there is evidence to suggest that leaders’ behavior is influenced by subordinates perspective and perception. Effectiveness of leadership behavior is influenced by subordinates’ expectations. Recent studies concluded that leaders would be perceived as effective by subordinates and succeed in exerting great influence on them when they behave in ways closely matched with needs and values of subordinates. Subordinates in an organization develop in their mind an implicit theory of leadership describing how effective leaders should act and a leader prototype or mental image of what characteristics an effective
leader should have. Organization members asked to select a person for a particular position; or asked
to evaluate the performance of a leader in a given task situation can be expected to compare a leader
or leader candidate to these mental images of leaders. This is an important process because often it is
not actual leadership ability or effectiveness that forms the basis for the judgment, but the degree of
match, or fit, with the image of what a leader looks like and what a leader does. Bound to the above
discussions, this paper aims to empirically determine the level of leadership effectiveness and leaders’
behavior from Academic Staffs’ perspective. This study is a cross-sectional research by distributing a
set of questionnaire to academicians at Jimma University. A sample of 130 of academicians from four
colleges responded to a questionnaire which measured the leadership effectiveness and leaders’
behavior. Decision making, leadership performance, personal characteristics and communication skill
were identified as the most important areas for effective leaders’ behavior. Leadership effectiveness
model was adopted from Mirza (2003). The finding of this study fulfills the study objective and
supports the leadership theory. All demographic variables show no difference on perceiving
leadership effectiveness. There are positive correlations between leadership effectiveness and all four
behavior areas (leadership performance, decision making skill, communication skill and personal
characteristics). Personal characteristics are a dominant factor on perceived leaders’ leadership
effectiveness followed by organizational performance, communication skill and decision making skill.

An Exploration of the Utilization of Supervision Feedbacks: The Case of
Some Secondary Schools in Jimma Zone

By
Adula Bekele, Dr. Taye Tolemariam, Tadesse Regassa, Bekalu Ferede and Abbi Lemma

Abstract
The purpose of this qualitative case study was to explore how secondary schools use the feedback
they receive from the supervisors. Qualitative approach is holistic, contextual and focuses on design,
and procedures to gain real, rich and deep data to have a wide understanding of the entire situation
which is also applicable to this study. With this understanding therefore, qualitative approach was
employed for this study. Accordingly, data was collected from Woreda education offices, school
administration board, principals, vice-principals, supervisors, department heads, and senior teachers
through in depth interview, FGD and document analysis. Then, the data was analyzed qualitatively
theme by theme through narrative descriptions. The finding revealed that, there no difference among
the schools concerning the importance of utilizing supervision feedbacks in improving teaching
learning activities in schools. On the contrary, the actual utilization of supervision feedback is not as
per the intended in all the schools under the study which indicates supervision feedback utilization is
under challenge. Thus, majority of the schools have mentioned the followings as problems. These are,
supervision roles are simplified by the respective offices, low readiness of teachers to positively see
the comments of supervisor, supervisor’s lack of supervision skills to supervise teachers in giving
objective feedback, lack of close cooperation from the side of Woreda education offices. They are
criticizing the school being at a distance rather than arranging conditions to work in collaboration. Finally, measures to be taken by the concerned bodies to alleviate the problems were suggested both by research participant and researchers.

Quality of Education: The Case of Jimma University

By

Tadesse Regassa, Taye Tolemariam, Adula Bekele, Bekalu Ferede and Abbi Lemma

Abstract

The primary objective of this study was to investigate the quality of education, research and service in Jimma University thereby to recommend options for overcoming the constraints. To attain this objective, a cross sectional survey method was used with the focus area of Jimma University as a whole and target population of regular students, teachers, department heads, and units of student support services. The data was collected through questionnaires, interview, FGDs, and observation and analyzed both quantitatively and qualitatively based on the nature of the data collected. The findings of the study revealed that Jimma University has used different means to disseminate its mission, vision and values to its staff through various approaches. The University has also made its level best to enhance the quality of education through the implementation of continuous assessment, active learning approach, e-learning, and application of community-based training. On top of these, the University has exerted an effort to reduce the dropout rate through the mechanisms of remedial and affirmative action. Apart from the efforts made, some of the students did not understand the intention of the action and awareness creation should be the next step. There was also a variation among colleges and Institutes in the implementation of continuous assessment, active-learning method, curriculum development, grading system and hence the academic program and quality assurance director should do its level best to maintain uniformity among these units of the University. Students were also highly complaining the services provided in the university such as cafeteria, dormitory, student clinic and guidance and counseling and it requires the office to develop the capacity of counselors, nurses, lab technicians, pharmacists and cafeteria workers.
Knowledge and Attitudes of Coffee quality Among Coffee Value chain Actors in Oromiya and SNNP Regional states of Ethiopia

By

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Abstract

In time bound when nobody was sure how Coffee arabica L. was originally discovered, coffee has been growing by Ethiopian smallholder coffee farmers in the untamed forests of Kaffa. But recently a series of complaints has been reported from this natural home of arbica tree and the origin of coffee legend which even resulted in to uttered rejection of export consignments. With the emergence of new competent coffee producing countries, the challenge was exacerbated leaving no room unless providing best quality coffee as the way out to market. This paper reports the findings of a study to investigate coffee value chain actors’ knowledge, attitudes and perception about coffee quality and factors affecting it. Using a multistage mixed sampling technique, data were collected from 153 coffee value chain actors across the study sites and the result signified the knowledge and perception of coffee quality significantly varies not only across the study areas but also along the chain actors. The assessment has also indicated that socio-economical factors like plant population, and use of improved coffee varieties were the principal factors that affect the production of coffee quality among coffee producers whereas low perception regarding coffee quality was evident across years and location

Key words: Perception, knowledge, attitude, coffee quality, survey, household,
Assessing the potentials of *Rhizoctonia solani*-inhibiting bacteria through mutational analysis and *in vivo* bioassay

By

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ABSTRACT

Rhizoctonia solani is the most damaging soil borne pathogen of many crops including sugarbeet worldwide and direct chemical control is difficult. During the last century suppressive to soilborne diseases like R. solani soils have been identified and antagonistic to soilborne diseases microorganisms have been isolated. In due courses, over 100 Pseudomonas strains that inhibit R. solani in vitro have been isolated and categorized into13 groups. More than 80% of these bacterial strains belong to groups A, B and C. Group B is known to produce 2, 4-diacyltlatedphloroglucinol (2, 4-DAPG) while groups A and C produce cyclic lipopeptide antibiotics. In this study representative of the three groups, strains A1, B3, and C52 were studied in two replicate experiments with the objectives of 1) to generate mutants of B and related isolate B*68 that are defective in DAPG production and 2) to determine the effect of the strains and their respective antifungal compounds on R. solani disease suppression. Our mutagenesis of B3 and a closely related isolate B*68 resulted in a 2, 4- DAPG deficient mutant of B3 that no longer inhibited (R. solani) in vitro indicating that 2, 4-DAPG is the only compound responsible for inhibition of R. solani. However, the approach was not successful for isolate B*68. The results of our in vivo bioassay revealed that among the three tested strains of Pseudomonas strains A1 and B3 were found to be good biocontrol agents against R. solani indicating the role of 2, 4-DAPG and the cyclic lipopeptide in disease suppression in vivo. Though R. solani suppression by strain C52 was observed in this experiment, its effect against sugarbeet seed germination unlike the other two was found to be stronger leading to further studies to confirm the result.

Keywords: Suppressive soil, *Rhizoctonia solani*, sugarbeet, antibiotic-producing bacteria, *Pseudomonas* spp, 2, 4-diacyltlatedphloroglucinol, cyclic lipopeptides
Characterization of Geological Materials in the Gilgel Gibe Catchment, Southwestern Ethiopia: Implications on Soil Genesis

By

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Abstract

Detailed geological and geochemical characterization is crucial in the study of soil genesis in such geologically and topographically complex systems as the Gilgel Gibe catchment in southwestern Ethiopia. Field studies, as well as mineralogical, petrological and geochemical analyses on selected rock samples and their weathering products revealed that the catchment is dominantly underlain by rhyolites and trachytes, which occur as both lava flows and pyroclastic associations. Most of the lavas have a trachytic texture, while a few others are massive or show spherulitic or perliric texture. The rocks have a SiO\textsubscript{2} content ranging from about 62 to 73 wt\% (intermediate to felsic composition, on an anhydrous base) and a relatively high Na\textsubscript{2}O+K\textsubscript{2}O content ranging from about 9 to 12wt\% (anhydrous base). The dominant phenocrysts present in the rocks are plagioclase, sanidine and Fe-Ti oxides. Alkali-rich amphiboles and quartz occur in most of them, while hornblende, titanite and clinopyroxenes were observed intermittently. The amount of phenocrysts varies from less than 1 vol. % to about 30 vol. %. The pyroclastic associations are discontinuously scattered within the study area. They all have a glassy matrix (vitrophyric texture) and are composed of a mixture of lithics, crystals and glass. In comparison with the lava samples, the pyroclastic samples exhibit a more variable chemistry. In contrast, the X-ray diffractograms of the pyroclastic deposits and the lavas show little difference.

Key words/phrases: Gilgel Gibe catchment; geological materials; parent materials; soil genesis; Ethiopia
Studying the Response of Honeybees for different Types and Rates of Pesticides

By
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Abstract
Many agricultural crops are wholly or partially dependent on bee pollination for proper seed and fruit set, and demand for pollinator-dependant crops is increasing. Honey bees have been considered the most ecologically and economically significant pollinator globally but there is increasing awareness of the important role other bees play in pollination. The use of chemicals and pesticides for crop pests, weeds, Tsetse fly, mosquitoes and household pests control brings in to focus the real possibility of damaging the delicate equilibrium in the colony, as well as the contamination of hive products. Of the various kinds of chemicals only insecticides and herbicides are now major problems to the beekeepers. The chemicals used for crop protection are the main pesticides that kill the bees. Pesticides exposure is regarded a potential threat to honey bees; as such, acute (contact and oral) toxicity tests on honey bees are usually required before registration of pesticides. These both acute contact and oral toxicity tests were conducted at an entomology laboratory of Dalhousie University Agricultural Campus, Canada. Malathion and 2, 4-D are the major commonly used chemicals in Ethiopia and Riman 10EC is one of the major commonly used chemical in Canada that were found at the entomology laboratory of Dalhousie University Agricultural Campus. Therefore, research was conducted with the objective of comparing the toxicity of these different types of chemicals and also to compare the toxicity of the different rates of these chemicals on honeybees. Number of dead bees from both contact and oral toxicity test from each rates and treatments/chemicals were recorded at 24, 48 and 96 hrs intervals. All the collected data were subjected to Minitab version 16, statistical software for the analysis. The result of acute contact toxicity test of the first experiment indicated that there was a significant difference (P<0.05) between treatments/chemicals within in 24hrs and 48hrs and there is a highly significant difference (P<0.01) between treatments/chemicals with in 96 hrs. As compared to 2, 4-D amine 600 and Riman 10EC at 24, 48, and 96hrs, Malathion 50EC is found to be the most toxic pesticides at its recommended field rate. The oral toxicity test of the second experiment indicates that there is a highly significant differences (P<0.01) between treatments/chemicals. The result of the oral toxicity test indicated that ingestion of the recommended field rate of Malathion and 1% of it killed all the bees within 24hrs as compared with the others. Therefore, from this piece of research it could be concluded that the recommended field rate of Malathion and 2, 4-D amine 600 are highly responsible of reduction in honeybees’ population when bees were in contact with the chemicals. And also bees are seriously killed when they were exposed to feeds containing the recommend field rate of Malathion 50EC and 1% of it. Therefore, from both contact and toxicity test one can also conclude that Malathion 50 EC and 2, 4-D 600 are found to affect/kill honeybees seriously as compared to Riman 10EC.

Keywords: contact, honeybees, oral, pesticides, toxicity
Seroepidemiology of Peste des Petits Ruminants (ppr) in Selected Areas of Ethiopia

By

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Abstract

The present study was conducted to estimate the overall sero-prevalence of PPRV infection in small ruminants (sheep and goats) in four selected regions and one administrative council in Ethiopia and to estimate the overall, zone, woreda, Kebele, age and specieswise seroprevalence. Out of 2439 sera of sheep and goats 1153 (47.27%) of animals were found to be sero-positive for PPR using c-ELISA, with 95% CI of 45.27% – 49.29%. Statistically significant ($\chi^2 = 15.51, p < 0.05$) variation was observed in the overall seroprevalence of PPR among the regions, with high prevalence in Amhara (52.8%) followed by Dire Dawa (49%), Tigray (47%), Oromia (46.1%) regions and Southern Nations Nationalities and People's Regional State (40.5%). Similarly there was a significant differences ($\chi^2 = 168.48, p < 0.05$) in the prevalence among the eight surveyed zones, in this, regard the lowest (22.5%) and highest (73%) prevalence were recorded in Arsi and Borena zones of Oromia region, respectively. The seroprevalence of PPR at woreda level, the highest prevalence (73%) was documented in Yabello of Oromia region and the lowest prevalence (24.5%) was seen at Werie-leke woreda of Tigray region with a statistically significant variation ($\chi^2 = 289.07, Df = 11, p < 0.05$). The overall seroprevalence of PPR among female and male animals had significant variation, being high in female (p < 0.05). The sera of the goat showed higher sero-positivity (50.4%) when compare to sheep sera (41.4%) for PPR, similarly the seroprevalence of PPR showed a significant variation among different age group of animals. The disease being high in adult age group than young (OR = 1.56, 95% CI = 1.32-1.84). The overall odds of PPR seropositivity in female animals were statistically high when compared with male animals (OR= 1.42, 95% CI: 1.17-1.72). Statistically significant variation was observed in the overall seroprevalence of PPR among the different kebeles of each region. The results of this study documented serological evidence for widespread distribution and endemic establishment of PPR in small ruminant population of the study areas. The establishment of early warning systems and proper implementation of control measures are needed, including regular surveillance and vaccination to improve animal production.

Key words: Peste des Petits ruminants; (PPR); c-ELISA; Seroprevalence; sheep and goat, Ethiopia.
An Abattoir Survey on the Prevalence and Monetary Loss of Fasciolosis among Cattle in Jimma Town, Ethiopia

By
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Abstract

A cross sectional study was carried out between January, 2011 and June, 2011 with the aims of determining the abattoir prevalence and monetary loss associated with fasciolosis in cattle at Jimma municipal abattoir, Jimma, Ethiopia. From the total 382 examined cattle, 54.5% (208/382) were found to be positive for fasciolosis by postmortem liver inspection. From 208 infected livers with Fasciola species, Fasciola hepatica was found to be the most prevalent species (65.4%) in the study. Fasciola gigantica, mixed infection and immature Fasciola species were proved to be 36.0%, 11.5% and 10.1%, respectively. Highest prevalence of fasciolosis was observed in poor body condition cattle (85.9%) followed by medium (55.1%) and good body condition cattle (34.5%), respectively. Statistical analysis of the data showed the presence of statistical significant difference (P < 0.05) on the prevalence of fasciolosis among the different body conditions. Analysis of the abattoir data indicated a total annual liver condemnation which resulted in 87,577 Ethiopian birr (5152 USD) loss. Similarly, the average carcass weight loss was confirmed to be 2,482,819 Ethiopian birr (146,048 USD) due to fasciolosis in cattle. The overall total annual monetary loss due to fasciolosis in cattle at Jimma municipal abattoir was proved to be 2,570,396 Ethiopian birr (151,200 USD). The results of the present survey showed that the prevalence and monetary loss of fasciolosis in cattle slaughtered at Jimma municipal abattoir was very high and warrants immediate need for prevention and control of the parasite in the study area in particular and in the country at large.

Keywords: Abattoir, Prevalence, Monetary loss, Fasciolosis, Cattle, Jimma
Review on the Effect of Climate Change on Plant Disease and Disease Management

By
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Abstract

Greenhouse gas concentrations in the atmosphere are being altered by Human activities, thus causing global climate change. Taking into account the work done, this review addresses the impact of climate change on plant diseases, considering the effect on crop grown, development and the impact on crop production and their management. These activities, intensified after the Industrial Revolution at the end of the eighteenth century result from the use of natural resources such as fossil fuel burning, deforestation and other land use changes. The atmospheric concentration of carbon dioxide (CO₂) has reached levels significantly higher than in the last 650 thousand years. Since 2000, the growth rate in CO₂ concentration is increasing more rapidly than in the previous decades. Similar trends have been observed for methane (CH₄), nitrous oxide (N₂O), and other greenhouse gases. Consequently, several changes in the climate have been registered. The average global surface temperature has increased by 0.2ºC per decade in the past 30 years. Eleven of the twelve warmest years ever registered by instruments since 1850 occurred between 1995 and 2006 - with the exception of 1996. Alterations in the water cycle have also been observed. Changes will probably continue to happen even if greenhouse gas concentrations stabilize, due to the system's thermal inertia and to the long period necessary for returning to a lower equilibrium. The classic disease triangle establishes the conditions for disease development, i.e. the interaction of a susceptible host, a virulent pathogen and a favorable environment. This relationship is evidenced in the definition of plant disease itself. A plant disease is a dynamic process in which a host and a pathogen intimately related to the environment are mutually influenced, resulting in morphological and physiological changes. Diseases are responsible for losses of at least 10% of global food production, representing a threat to food security. The analysis of the potential impacts of climate change on plant diseases is essential for the adoption of adaptation measures, as well as for the development of resistant cultivars, new control methods or adapted techniques, in order to avoid more serious losses. New disease complexes may arise and some diseases may cease to be economically important if warming causes a pole ward shift of agro climatic zones and host plants migrate into new regions. Pathogens would follow the migrating hosts and may infect remnant vegetation of natural plant communities not previously exposed to the often more aggressive strains from agricultural crops. Climate change is a major development challenge to Ethiopia. Developing countries are likely to be affected most, and Ethiopia is one of the most vulnerable countries. Unless adaptation measures are widely implemented, climate change can set back development efforts and achievements by years. Recognizing this, the Government of Ethiopia (GOE) and civil society organizations have since recently been making considerable efforts should be to tackle the climate change problem by green revolution.

Key word: climate change, plant Disease, pathogen, Ethiopia
Study on the Prevalence of Gastrointestinal Parasites in Small Ruminants in and around Jimma Town

By
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Abstract
A cross-sectional study was conducted from November 2011 to April 2012 with the objectives of determining the prevalence, identifying the species involved and assessing risk factors of gastrointestinal parasites in small ruminants in and around Jimma town. Faecal samples were collected from 214 sheep and 170 goats and examined coprologically. Floatation, sedimentation and coprocultures were employed to identify helminthes. The study found that 191 (89.3%) sheep and 148 (87.1%) goats were found to harbor one or more gastrointestinal parasites. All species, sex, age groups were infected with identical parasite species, but with different levels of infection. The prevalence of various types of parasites in sheep and goats were respectively: fasciola species 19.6%, 7.6%; paramphistomum species 22.4%, 14.1%; Haemonchus species 37.4%, 42.9%; Trichostrongylus species 26.2%, 23.5%; Strongyloid 20.1%, 25.9%; Ostertagia species 16.8%, 24.1%; Oesophagostomum species 9.3%, 8.2%; Trichuris species 7.9%, 5.3%; Chabertia species 4.2%, 8.2%; Bunostomum species 2.3%, 5.3%; Monezia 13.1%, 8.8%; Emeria species 11.7%, 20.6%. Both Fasciola species and paramphistomum species prevalence were higher significantly in sheep whereas the reverse is true for coccidia species in goats. The prevalence of Haemonchus species, Ostertagia species, Strongloids species, Chabertia species, and Bunostomum species were higher in goats but revealed statistically no significant difference (p>0.05), whereas Trichostrongylids species, Oesophagastomum species, Trichuris and Monezia species were higher in sheep than goats with no significant difference as well (P>0.05). The prevalence of some gastrointestinal parasites (haemonchus species, strongloids species, Emeria species, Trichuris and Chabertia) were higher in young than adult small ruminants shown significant difference (P<0.05), where as paramphistosomum, Ostertagia, trichostrongylus, Oesophagastomum, and Bunostomum were also higher in younger than adult sheep and goats, but not significant (P>0.05). In this study Fasciola was found higher in adult than younger animals significantly (P<0.05), while the reverse is true for monezia. The prevalence of paramphistosomum and Haemonchus was higher in female sheep and goats than males significantly (P <0.05). From studied animals 33.9% lightly, 26.0% moderately and 28.4% heavily infected. Therefore, awareness creation to the farmers should be instituted in the study area on the effect of gastrointestinal parasites of small ruminants and its control, and strategic deworming of small ruminants should be practiced.

Keywords: Jimma, goat, sheep, parasite, prevalence
Evaluation of Botanical Herbicides against Common Weed Species of Coffee (Coffea arabica L.) with Emphasis on Bidens pilosa at Jimma, Southwestern Ethiopia

By
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Abstract
Despite the wealth of genetic diversity, the yield of Ethiopian coffee is low compared with other producer countries. Weeds are one of the most limiting constraints of crop production particularly in organic farming systems, as no herbicides are allowed due to the intent of curtailing their negative impacts on the environments, health and sustainability reasons. Similarly, techniques like mechanical, cultural, biological etc. can be costly and may fail to control weeds adequately. Using natural products, like bioherbicides, are among possible alternatives for weed control in organic farms. Therefore, a series of laboratory, lath-house and field experiments were conducted in 2011/12 at Jimma, Southwestern Ethiopia with the objective of exploring botanical herbicides against common weeds of coffee with emphasis on B. pilosa. The botanicals evaluated in the present study consisted of Artemisia annua, Rosmarinus officinalis, Trachyspermum ammi, Cymbopogon winterianus, Eucalyptus citrodora, Eucalyptus globulus, Piper nigrum, Ricinus communis and inert minerals (Diatomate, Bole, and H2O2) combined with concentrations (0.03, 0.06 and 0.09% (v/v)) in CRD for laboratory, application frequency (1x, 2x and 3x) in RCBD with 5% (v/v) concentration for lath-house and field experiments. For comparison, a control and standard check were included and a factorial arrangement was used for all experiments with three replications. In view of that, data were collected on germination, growth and growth parameters of B. pilosa seeds and common weeds of coffee. The results under laboratory revealed that the differences among tested materials were very highly significant (P<0.001) for all parameters studied. The least germination percent (2%) was obtained as a result of seeds treated with E. citrodora and C. winterianus at 0.09% (v/v) compared to control (98%). Germination rate was fastest for seeds treated with only distilled water (54.42 seeds day⁻¹) and the lowest was recorded from C. winterianus (0.16 seeds day⁻¹) at 0.09% (v/v). Shoot and root length of B. pilosa were very highly significant (P<0.001) variation. The inhibitory effect of tested materials under lathhouse was not as effective as laboratory experiments. Regardless of these differences, oils extracted from C. winterianus, E. citrodora, R. officinalis and E. globulus revealed consistence inhibitory effects at both conditions. Essential oils from E.citrodora, C. winterianus and T. ammi also checked their potential herbicides against common weeds of coffee at field trial and the result revealed that highly significant for first two botanicals and no difference for T. ammi related to control for all growth parameters. From these findings, essential oils from E. citrodora and C. winterianus revealed consistent inhibitory effects on growth and growth parameters of weed species at various experimental conditions. Therefore, organic coffee farming systems in Ethiopia may use these oils as alternative means of weed control even though further study needs to be conducted to know the active ingredients inherited from the source plants, mode of action, rate as well as time of application to come up with practical recommendation.
Chocolate Spot Epidemics on Different Faba Bean Varieties and Characterization of Some *Botrytis fabae* Isolates Collected from Dawuro Zone, Southwest Ethiopia

By

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Abstract

Chocolate spot caused by the fungus *Botrytis fabae* is the major disease threatening faba bean (*Vicia faba* L.) production in Ethiopia. However, the intensity and importance of this disease are not well studied in the faba bean production areas of southwest Ethiopia. The present study was conducted to determine the distribution, epidemics of chocolate spot on different faba bean varieties and to characterize some *B. fabae* isolates in major agro-ecologies of Dawuro Zone. Field survey carried at 44 farmer’s faba bean fields and the field experiments at three different agro-ecologies using fourteen faba bean varieties arranged in RCB with three replications. All the surveyed fields were infested with chocolate spot. Disease severity indices (DSI) varied among PAs, altitude range and crop management practices. The mean DSI ranged from 33.4 to 69.4%. Logistic regression analysis showed that PA, crop variety, crop history and altitude were significantly associated with DSI in a multiple variable model. Higher DSI was significantly associated with high altitude (>2200). The progress of the symptoms evolved slowly on certain varieties but at much greater rates on other varieties depending on location. DSI scores almost for all assessment dates and the AUDPC values varied considerably among the varieties and significant genotypic differences were observed at all locations. The varieties Hachalu, Kuse, Tumsa, Mesay, Moti, Gebelcho, Walki, Nc-58 and local cultivar were suffered from the disease (highest AUDPC). Conversely, CS20DK, Degaga, Bulga-70, Tesfa and Kasa were rated moderately resistant and developed the least symptoms at all locations. Highly significant differences were observed for number of pods per plant, seed yield and hundred seed weight among varieties. CS20DK (2100kg/ha), NC-58 (2027kg/ha), Moti (1973kg/ha) and Degaga (1910kg/ha) under Tocha conditions where as Degaga (1327kg/ha), CS20DK (880kg/ha) and NC-58 (870kg/ha) under Mari conditions were the top yielding varieties. The correlation between seed yield and DSI for all assessment dates were negatively and highly significant (p<0.01) having correlation values ranging from -0.592 to -0.361 at Tocha and Mari. Significant differences were observed in the frequency of isolates among PA with colony color (X2=35.94, df = 2, p<0.05) and colony growth rate (X2=38.7, df=2, p<0.01). According tomorphological characteristics all isolates were identified as *B. fabae* species (11-14 × 7-10 μm, mean 12.5×7.8 μm). In greenhouse, all isolates showed typical chocolate spot lesions and differed in their aggressiveness (27% more, 64% medium and 9% less aggressive). The study revealed high occurrence and importance of chocolate spot (*B. fabae*) in the major faba bean growing areas of high altitudes and integrated disease management options like use of tolerant and high yielding varieties with appropriate cultural practices like weeding, seeding rate, timely ploughing, fallow cropping or crop rotation with cereals are recommended.

**Key words:** Faba bean, epidemics, chocolate spot, *Botrytis fabae*, Aggressiveness
Parallel Session 5: Organized by Jimma Institute of Technology, Jimma University

The Utilization of I.T. in Managing the Stability of Supplied Goods from Distribution Down to the Consumer Level

By
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Abstract

In an economy that are driven mostly consumers it is of importance that consumer items are made available by the suppliers in a timely manner though its retailers. On the part of the retailers keeping the price affordable to their regular customer is another aspect but making sure the supply of goods are managed well to its inventory level particularly the most frequently bought items. A well managed inventory would translate to profits for a businessman. Managing the inventory of items in either by guesstimating or manually may result to disappointment both on the part of the customer as well as to the establishment owner. However, most of the common problems on keeping the availability of goods can be attributed to locating missing stocks on the warehouse, wrong identification, incorrect management of stocks in the store location just to mention a few. These issues can be avoided by using the proper methods with the aid of information technology and proper devices. Apart from this both the supplier and the retailer can gain significant advantage in terms of management including profitability.

Keywords: SKU, Inventory Level
Development of Hydrological Model for Flood Early Warning

By

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Abstract

Floods often have an enormous impact on the environment and society. Flood disasters are attributed to rivers that overflow or burst their banks and inundate downstream plain lands. A major river basin in Ethiopia that has serious flood problems is the Awash River Basin that is located in the Rift Valley. In order to reduce negative impacts of floods, an early warning system is a prerequisite. This study serves to evaluate if a flood early warning system for the upper and middle Awash River Basin located in Ethiopia can be developed by applying remote sensing based hydrological modeling. The research was executed in three phases. In the first phase a rainfall runoff model was developed. The second phase is i) validation of ASCAT surface soil moisture (ASCAT-SSM) product using in-situ data, and ii) estimation of standard precipitation index (SPI) and Topographic Wetness Index (TWI) as distributed over the basin area. The third phase aims at developing a relation between ASCAT-SSM/SPI with the stream-flow hydrograph and water-level in the river channel. Satellite derived products were used to force the hydrological model (LISFLOOD); and results were compared to observations of river discharge in the area. The model was calibrated by a Trial and Error procedure using observed stream flow from 2007 and 2008 and validated using stream flow data for 2009. The sensitivity of five LISFLOOD model parameters was performed to evaluate and to assess the model performance in simulating the upper and middle Awash River flow. Furthermore, integrated index maps, which indicate source areas for flooding were produced by combining the standard precipitation index (SPI) and the topographic wetness index (TWI). According to the result from the sensitivity analysis, two LISFLOOD model parameters (LZTC and GWPV) affected the base flow part of the hydrograph, whereas, the effects of the other three parameters (UZTC, PPBF and Xb) are on the quick flow. From the analysis of daily SPI for the wet period, two time periods (June 13 – 20 and July 27 – August 04) were found that have high SPI values (>1). The two periods indicate that rainfall may cause flooding in the flood prone areas. The incidence of floods during August (~1st to 8th) coincides with the time of peak flow in the river channel and high water level simulated of the period 2007. Therefore, high SPI value (which indicates high rainfall above normal) during the second window of time can be attributed to the occurrence of the floods during the beginning of August, however, the result has to be further validated by applying local scale flood modeling. The combined index analysis illustrated the spatial distribution of possible source areas for floods in the flood prone areas.

Keywords: Early-Warning; Flood; LISFLOOD; Standard Precipitation Index; Topographic Wetness Index; Combined Index
Site Specific Wind Turbine Design Optimization for Adama I wind Farm 
Aimed at Minimization of Cost of Energy

By
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Abstract

Horizontal Axis Wind Turbine (HAWT) Rotor aerodynamic design optimization methodology for specific site wind resource characteristic has been adapted to minimize the unit cost of energy for Adama I wind Farm. The focus is to project the potential savings offered by site specific design of wind turbine. The aerodynamic performance parameters of S-series airfoils used for blade design process have been numerically generated by XFOIL and validated with experimental results from literature. To predict life cycle cost for the optimization process, standard cost models of HAWT are scaled for cost spent on Adama I wind Farm and validated with Commercial prices globally available. The Annual Energy Production (AEP) has been evaluated by an open source HAWT optimization code, named HARP_Opt in this work. The code couples Genetic algorithm optimization routine with Blade Element Momentum (BEM) theory based wind turbine rotor performance predictor (WT_Perf). In sample design optimization study, the site wind speed characteristics are taken from Adama I project. Baseline case and three scenarios have been generated to investigate the effect of airfoil profiles and turbine rated power on AEP and Cost of Energy for this specific project site. For all scenarios generated, Annual Energy production and Cost of Energy have been compared with Base line design taken from the installed turbines at Adama I Wind Farm and an increase of 12 to 28.5% in net annual energy production has been observed with an attendant reduction in Cost of Energy by 8.44 to 17.6%. Atmospheric turbulence effect on AEP has also been investigated and found to net annual energy by 1.8 % to 5.5%. For Adama I, Wind Farm with capacity of 51MW, $2.13 million savings per year has been projected. Consequent to the findings of this work, it can be concluded that optimizing wind turbine through site specific design, especially for large Wind Farm can effect substantial savings contributing to the greater harvesting of wind energy.

**Key Words:** Wind Turbine design optimization, Site specific design, Horizontal Axis Wind Turbine, Cost of Energy
Development of Clean Burning Pyrolysis Cookstove Co-Producing Biochar for Carbon Sequestration

By

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Abstract

This work aims to improve household air quality, human health, energy management, enhance soil fertility and mitigate climate change through effective recycling of the largely untapped renewable energy source i.e., agricultural and agro-industrial biomass waste generated each year in environmentally and socially sustainable manner. Development of clean-burning pyrolysis cookstoves co-producing biochar will be used to achieve the associated benefits. The biochar along with energy produced by the stove can provide a carbon-negative energy resource and a useable co-product for soil improvement which help sequester up to 50% of the carbon from solid biomass fuel that otherwise will be emitted to the earth’s atmosphere. This feature of biochar combined with enhanced soil fertility, moisture retention, soil pH balancing and potential on-farm and community-based bioenergy production enables reaping of multiple benefits encompassing agricultural, energy as well as water resource sectors thus contributing significantly towards sustainable development in Ethiopia. In this context, this paper aims at the development of clean-burning cook stoves co-producing biochar with optimal configurations vis-a-vis the locally available biomass feed stocks, which can serve as a springboard for future integrated rural development projects involving sustainable clean-energy.

Specifically several parameters have been varied starting with the ANILA stove based design as well as the TULD gasifier stove design. The temperature distribution measurements, the char yield, burning time and the effects of stove modifications on cooking efficiency are presented and discussed. Biomass feed stocks tested include coffee husk, saw dust and wood chips.

Key Words: Pyrolysis cookstove, Allothermal pyrolysis, Clean burning Cook stove, Biochar, Carbon sequestration
Enhancing Biogas Production from Sewage Sludge through Anaerobic Co-Digestion with Abattoir Wastes

By

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Abstract

Concerns about the managing of sewage sludge for an ever increasing trend of sewage sludge generation coupled with the complex sludge characteristics is a big challenge for Addis Ababa Water Supply Authority. Accumulation of large volumes of dried sludge (cake) in treatment compound has become common. Since sewage sludge contains toxic pollutants and disease-causing organisms and the failure to properly manage sewage sludge may have adverse effects on human health and the environment. As a result, the city water supply authority has to search for holistic and systematic ways of managing it. In this study, a lab scale batch anaerobic co-digestion of sewage sludge and abattoir wastes under mesophilic condition for 20 days was used to digest sewage sludge taken from Kaliti dump site and reduction in volume of the wastes as a result of anaerobic digestion, production of methane and soil conditioner potential were analyzed. Abattoir wastes were co-digested with sewage sludge so as to enhance its nutrient values. 100% SS, 80%SS:20%WA and 60%SS:40%AW mix ratio were used to analysis the biogas productivities of different mix ratios and 33.8%, 48.3% and 56.9% methane were obtained for SS alone, 80%SS:20%AW and 60%SS:40%AW respectively. Reductions in volume of the sludge after digestion were also seen as the mix ratio increases. The obtained results are generally consistent with the data from literature where co-digestion of sewage sludge with other substrates rather than abattoir wastes were used.

Key words: Biogas, Sewage sludge, abattoir waste, co-digestion
Influence of Geological Formation and Slope Zone on Drainage Density and Its Implications

By

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Abstract

The variation of drainage density which is one of the important and basic parameter of drainage pattern has been analyzed under different geological formations and with different slope zones in three adjacent basins of Barureva, Sher and Umar rivers, these selected areas constitutes one of the important sub basin of Upper catchment of Narmada river in Central India. The hydrogeological map of the three basins shows that there are recent Alluviums, Deccan Traps (basaltic) and Gondwana formations dominant in the upper reaches as compared to Quartzite and gneissic-schistose rocks of Archeans complex which are found in only limited outcrops underneath the thick cover of the alluviums. The drainage density has been compared under different combination of slope zones and geological foundation. This comparison facilitates understanding the formation of drainage network and its implication with the geological foundation and slope zone. The study found that lowest drainage density is associated with Alluvium (soft geological formation) while highest drainage density is prevailing on the Archeans formation which is happened to be most impermeable rock in the region. The variation of drainage density in three basins under same slope zone and under same geological formation indicates structural homogeneity and heterogeneity of that geological formation.

Keywords: Drainage density, Geological formation, Slope zone, Narmada River

Experimental Investigation on Thermal Efficiency of Diesel Engine with Jatropha-Diesel Blend with Biogas

By

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Abstract

Most dual fuel studies in the past used diesel/biodiesel as a liquid fuel and methane or natural gas as a gaseous fuel in dual fuel diesel engines. One more recent study also showed that simulated biogas can be used in dual fuel with pure jatropha oil with a limited parameter test. This work is the first techno-
economical performance based research on the use of actual field biogas with pure jatropha oil-diesel blends, and its aim is to conduct field performance investigation of a dual fuel diesel generator set.

Two diesel engines were modified to dual fuel system and other experimental setup components are also developed locally. Three performance parameters (thermal efficiency, volumetric efficiency and air excess ratio) are selected and experimental tests were conducted by using biogas and jatropha oil -diesel blends (i.e. 5%, 10%, 20%, 30%, 40% and 50%). Accordingly, preliminary and reference performance measurements of using diesel and the blends showed similar performance results in all the measured parameters

In the subsequent dual fuel operation, the thermal efficiency of all blends performs on an average of 31% at higher loads (4kw-8kw) in similar result with the diesel (31.5%). The volumetric efficiency of J10 +Biogas is 92% among the blends which is comparable to that of the diesel and the other blends with biogas are in ranges of 80% at lower load (1kw) and about 60% at higher loads, where the diesel has got 96% and 81% at lower and higher loads respectively. Air excess ratio of blends showed high reduction than the diesel. The highest ratio (4.37) is observed at lower load of 1kw by using J10+Biogas and the lowest ratio (0.95) is resulted by J40+Biogas at higher load of 8kw. The highest value for diesel is 6.17 at lower load (1kw) and 1.8 at higher load.

Four samples of used blends and pure jatropha oil are characterized in laboratory. The ASTM standard test of the lower blends; J5, J10 and J20 showed promising results in improving some inherent undesirable pure plant oil characteristics, such as viscosity and others. In the economic feasibility assessment part of this work, local and national level data are resulted in a payback period of 2-7years.

Since this exhaustive experimental test and measurement research work is achieved most of its goals by utilizing essential instrumentations and procedures, thereby it recommends the low percentages of jatropha oil-diesel blends (J5-J50) along with biogas for engine fuel as it is technically and economically viable, especially for a developing country, such as Ethiopia.

**Keywords:** Dual fuel operation, Jatropha-diesel blend with Biogas, Thermal efficiency, Diesel Engine

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**Modeling Creep in Heat Exchangers Accounting for Fluid-Structure Interactions**

By
Getachew Shunki Tibba

Jimma University, Jimma Institute of Technology, Mechanical Engineering Department

**Abstract**

The energy need of human being is ever increasing. The naturally available energy resources are in a crude form and need conversion to a form which is readily available for end use. Power plants play the role of this conversion process. The majority of the conversion processes take place at severe conditions of very high temperature and high pressure which are transient and non uniform in nature. Hence, the power plant components involved in the energy conversion process always exhibit
inelastic behaviors like creep and fatigue. The design of such components should consider these inelastic behaviors. This work focuses on modeling the creep of heat exchanger materials found in conventional steam power plants. Specifically, creep constitutive model of T91 steel which is commonly used for constructing super heater tubes is developed and a material user subroutine has been written to incorporate the model in commercial software ABAQUS.

**Keywords:** Creep, Constitutive model, Heat Exchangers, Material User Subroutine, T91 Steel, ABAQUS

**Utilization of Waste Polystyrene Material in Local Foundry Technology for Manufacturing Complex Shapes**

By

Mesay Alemu and Getachwu Shunki

Jimma University, Jimma Institute of Technology, Mechanical Engineering Department

**Abstract**

In traditional foundry technologies, casting of complex shapes is very difficult, if not impossible, due to difficulties in pattern removing. To overcome this difficulty, the pattern is replaced by polystyrene materials.

The utilization of waste polystyrene material in local foundry technology for manufacturing complex shape has not been recognized for a long time to overcome the difficult of traditional patterns those made from the plastic, metal and wood that used in sand casting for create mold cavity. Polystyrene material is used for casting pattern making that evaporated when the molten metal is poured into the molding cavity. Lost foam casting is a new advance technology that used for better the quality and complex shape of the casting products.

The ultimate goal of this task is to utilizing wasted polystyrene material in local foundry technology for produces the complex shape with minimizing labour efforts, times, burden of pattern removing and prevent the environmental pollution through recycling waste solid polystyrene that come from aboard inform of materials packing.

In this study, a computational model has been developed to simulate the filling process of molten aluminum and directional solidification of sample pulley for the purpose of predicting potential defect areas. The simulation has been done iteratively till computationally perfect model is obtained. Finally, the perfect model has been used for casting a sample pulley in the Mechanical Engineering Department Workshop.

**Key points:** Polystyrene, Lost foam
An Alternative Treatment Technology in the Field of Water and Wastewater Engineering

By

Esayas Alemayehu (PhD)

Abstract

In recent years, treatment plants which draw water/wastewater from contaminated resources are facing growing problems in delivering desired water quality. A number of technologies have been researched and developed over the years for the removal of excess contaminants from water and wastewater viz. precipitation, ion exchange and membrane separations. In conventional treatment systems, the processes (coagulation, sedimentation and filtration units) employed cannot be remove contaminants (e.g. metals, pesticides, etc.) efficiently. The adsorption phenomenon has received extensive attention for the removal of such contaminants from water/wastewater. It has been recognized that, if the adsorbent is chosen carefully and the solution chemistry is adjusted appropriately, adsorption based processes are capable of removing contaminants over a wider pH range and to much lower levels than conventional precipitation methods. The viability of adsorption methods is highly dependent on the development of adsorptive materials. It has been reported that various types of commercial as well as natural adsorbents such as Activated Carbon, Limestone, Iron Oxide Coated Sand, Bone Char, and Clay have the capacity to adsorb contaminants from aqueous solutions. However, available methods have one or more disadvantage, which make them not effective and not sustainable for many poor areas. Therefore, numerous approaches have been studied for the development of low-cost adsorbents. Because of their local availability in large quantities, high surface area and low cost, indigenous materials such as volcanic rocks can be utilized as cost effective and efficient adsorbents in several developing countries. Among the most abundant volcanic rocks include Pumice, a finely porous rock frothy with air bubbles; and Scoria, a rough rock that looks like furnace slag. The Ethiopian Rift Valley, which covers around 1/3 of the area of the country, has more of these cinder cones and lava fields. Volcanic rocks have received considerable interest for contaminants removal mainly due to their valuable properties, high surface area and low cost.

Key words: Treatment technology, Water/wastewater, Adsorption, Volcanic rocks
Alternatives for Areas with Shortage of Natural Sand

By
Wendemsesha Ayele Angelo

Abstract

The shortage of natural sand which is a main component of construction material is clear & major in & around Jimma which can be justified by taking only the upcoming unit of purchase to be meter cube rather than truck. The publicly disclosed cost share of construction material out of total construction project cost is 55%. Out of this share in Jimma 11% from total or 20% /one fifth/ of the materials’ cost is that of sand.

In a project needing 1,000 m³ of sand, 125 days are needed for transportation, running a minimum of 700 km bringing 15 m³ in each trip which costs on average 1,100 birr for a meter cube. This amount of demand is normal for any G+4 building with less than 500 m² plinth/ground floor area. Therefore due attention is needed to systematically keep the fine aggregate demand of the construction industry in Jimma minimum so that any cost of the government or investors shall be more effective. Also if some solution is not given, significant stakeholders will be discouraged to build a form to host a function be it contractor, or client. The professional designer was the first person just to dictate solution. Here lays the interest of this paper to show options to the consultant & the client who are the powerful solution maker.

Considering the detail of a project comprising 7 G+4 buildings with project cost of nearly 214 million, the current direct cost share of sand, 11% /23.5 mln/ will be decreased to 5.8% /12.4 mln/ by applying some of the alternatives proposed in this paper. Had this project been in Hawassa, this share should have been only less than 2.5% /5.35 mln/. This means in other words, had the project been in Hawassa maximum of 196 mln birr was enough for the same project. By alternate designs, more than 11 mln birr from direct purchasing cost and a need of nearly 5.7 mln birr for hard currency is avoided in addition to gain of more than 1,600 days for other investment. The projects in Jimma city in Universities & colleges, regional & federal government sectors, Airport & private institutions are counted to be more than 3 billion & the reasonably calculated cost which shall be accomplished only in one year /e.g. 2004 E.C/ is more than 1.2 billion birr. Out of projects costing 1.2 bln birr, the respective values of saving by applying alternate designs & specifications will be 62 mln birr from direct purchase, demand for 29 mln birr for hard currency & more than 7,000 working days from sand transportation by a truck.

If further researches are done more saving of the scarce & invaluable natural resources are gained. With the motto “WE ARE IN THE COMMUNITY” Jimma University shall take the leading role in both finding for & applying scientific solutions.
Metasearch Engines for Entomological Databases: Existing Challenges and Future Perspectives

By

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Abstract

At the moment, search engines are considered to be a valuable source and tool to obtain appropriate information within a short-span of time according to user’s requirements. Metasearch engines (MSE) integrate a group of such search tools, which enable the users to access the requisite information worldwide in a very transparent as well as more efficient way. In this perspective, the present review article is an attempt to discuss on the importance and necessity of metasearch engines, especially in terms of entomological databases. It also deals about the design and mode of operation concerning with our proposed metasearch engine. The design mainly focuses upon the intelligent select operation and the interface with relevant biological databases as well as search engines by ranking their competence using the user query processing mechanisms. The user feedback and retrieval history shall also be incorporated in the ranking refinement process. In addition, the methodology for parsing the results from the specific search engines and databases, and for producing the optimized set of results has been described in detail. The fast learning technology adapted for intelligent MSE, enables the metasearch engine to handle a query phrase in a reasonably short-span of time and return the search results with better accuracy. The ultimate goal is to create a new platform for the biological researchers in terms of effective search, concordant references and to facilitate with making stringent decisions based on comparison and inference of data from various relevant biological databases.

Keywords: Metasearch engines, entomological databases, query optimization, web mining, information retrieval.
Parallel Session 6: Organized by College of Social Sciences and Law, Jimma University

The Overwhelming Consequences of Child Sexual Abuse on the Survivors: Speaking the Unspeakerable

By
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Abstract

Research findings on child development have consistently revealed that children who experienced unhealthy childhood, live through hell and lead dysfunctional life (bombarded with traumatic flashback) when they are adult. Recognizing this hard fact, the 2010 National Policy Framework on Early Childhood Care and Education (ECCE) emphasized that all children in Ethiopia need to have healthy start in life.

The costs of child sexual abuse such as psychological, educational, social and economical are enormous, in both short and long-term of their lives. Sexual abuse can have a damaging effect on a child’s ability to develop adaptively in a broad range of areas. Researches revealed that, although not all children could show the same results, sexual abuse interferes with a child’s development in various ways: relationships with other people, self-esteem, self-confidence, physical activity, academic performance, and psychological functioning. Sexually abused children are vulnerable to developing mental health problems such as social skills deficits, posttraumatic stress disorder and other anxiety disorders, depression, or behavior problems. Children are more vulnerable to these problems if the abuse is more severe and sadistic; if they are younger when the abuse begins; if the abuse involves bizarre elements; and if they have a closer relationship with the abuser.

More recent findings show that girls are four times more likely than boys to be sexually abused; older children are more likely than younger children to be abused; and children living in single-parent homes and institutions may be more at risk for sexual abuse.

Parents’ and significant others’ close observations of the warning signs in children for possible child sexual abuse is of paramount importance, in safeguarding the lives of Ethiopian Children.

1. Background

The 2002 report by WHO highlights child abuse and neglect as a major problem worldwide, occurring in all cultures and societies. Accordingly, the WHO consultation has provided working definitions of child abuse and neglect with universal applicability. As a general definition the following was agreed:

Physical Abuse: Physical abuse of a child is that which results in actual or potential physical harm from an interaction or lack of interaction, which is reasonably within the control of a parent or person
in a position of responsibility, power, or trust. There may be single or repeated incidents. Physical harm can also be caused when a parent or carer fabricates symptoms or deliberately induces illness in a child (Fabricated or Induced Illness).

Child sexual abuse: It is the involvement of a child in sexual activity that he/she does not fully comprehend/understand, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violate the laws or social taboos of society. Child sexual abuse is evidenced by an activity between a child and an adult or another child who by age or development is in a relationship of responsibility, trust or power, the activity being intended to gratify or satisfy the needs of the other person. This may include but not is limited to: the inducement or coercion of a child to engage in any unlawful sexual activity; the exploitative use of a child in prostitution or other unlawful sexual practices; and the exploitative use of children in pornographic performances and materials. It is important to recognize that some form of sexual misuse of children will leave no permanent physical signs. It is, therefore, unrealistic to rely solely on medical evidence to make the diagnosis of child sexual abuse.

Emotional abuse: It refers to a relationship between the primary caregiver(s) and the child where the interactions are actually or potentially harmful to the child. Scholars in the area have suggested the following as examples of potentially emotionally abusive behavior by a care giver: Emotional Unavailability and Neglect; Persistent Negative Attributions often Justifying Harsh Punishment; Inappropriate / Inconsistent Developmental Expectations; Failure to Recognise Child’s Individuality and using child to fulfil caregivers Psychological needs; Mis-socialization and distorted communication (including isolation and involving children in criminal activities). Moreover, it is noted that, frequently, physical and sexual abuse is accompanied by emotional abuse or neglect.

Neglect and Negligent Treatment: Neglect is the inattention or omission on the part of the caregiver to provide for the development of the child in all spheres: health, education, emotional development, nutrition, shelter and safe living conditions, in the context of resources reasonably available to the family or caretakers and causes, or has a high probability of causing harm to the child’s health or physical, mental, spiritual, moral or social development. This includes the failure to properly supervise and protect children from harm as much as is feasible. However, for parents living in poverty it is important to acknowledge the additional difficulties they face in rearing their children and to recognise that “neglect” may be the result of the circumstances in which they are forced to live rather than a deliberate omission of care by them. Such “neglect” will however still adversely affect the child’s development.

Child Exploitation: Commercial or other exploitation of child refers to use of the child in work or other activities for the benefit of others. This includes, but is not limited to, child labor and child prostitution. These activities adversely affect the child’s physical or mental health, education, moral or social-emotional development.

It should be recognized that some children find themselves in exploitive situations because of parental neglect or as the result of detrimental choices made by their parents. It is usual for example, to find street children have run away from abusive or neglectful homes. Working children may well be abused physically and sexually by their employers.
Thus, it is of paramount importance to deeply understand that child abuse types are interwoven and one brings about the other. And, child sexual abuse is the worst of all the abuses and could devastate the lives of innocent children. That is why the present researcher committed himself to be the voice of the voiceless.

2. Rationale

The incidence of sexual abuse in Ethiopia is increasingly at alarming rate. This could be observed only by looking into the reported cases. However, in our context, the awareness and recognition of such issue is at its infant stage; and reporting such cases could be considered embarrassing and source of crisis. Realization of these hard facts and the devastating effects of sexual abuse on the survivors (and indirectly, on their caregivers), thus, ignited the present researcher to contribute a bit of his professional responsibility in critically reviewing the issue under discussion.

3. Method

The Methods used to address the topic of the study are critical related literature review and professional reflection of the present researcher. With regard to literature, internationally and nationally relevant research findings and other fund of knowledge related to child sexual abuse have been thoroughly and critically investigated. In addition, the present researcher has made his own professional reflection on the matter. As the matter of fact, the present researcher has been involved for so many years in treating such children (counseling and giving therapy); training professionals working with children at all levels. So, personal and professional reflection from such rich and authentic experiences is of paramount importance.

4. Major Findings on Child Sexual Abuse

A proportion of people who sexually abuse children have themselves been sexually abused as children. They may also have been exposed as children to domestic violence and discontinuity of care (Nelson et al, 2002; Getnet, 2007; Belay, 2008; Holmes, 2008; O’Leary et al, 2010) Vulnerability to sexual abuse is high for a child if: the abuse is more severe, sadistic, involves unusual elements; the child is older; the abused have a close relationship to the abuser; the child is at disadvantage or vulnerable already; the child is a girl; and the child lives with a single-parent (Ruggiero et al, 2000; Colman et al, 2004; Belay, 2008; Talbott et al, 2009; O’Leary et al, 2010). More recent findings show that girls are four times more likely than boys to be sexually abused; older children are more likely than younger children to be abused; and children living in single-parent homes and institutions may be more at risk for sexual abuse.

The study conducted in Addis Ababa (Markato area) by Dr. GetnetTadele in 2007 revealed that about 28.6% of male street children had been found to be abused. The major reasons for the abuses include: physical and mental immaturity of the children; secrecy and lack of awareness; use and abuse of drugs; the nature of street life; exposure to pornographic films; and limited legal enforcement (Getnet, 2007)

In general, sexual abuse incidents have been under reported. Relatively, the magnitude of male sexual abuse is less reported (Getnet, 2007; Belay, 2008; Jibril, 2012). For instance, in 2004 in Addis Ababa, 47 (22%) of male and 171 (78%) of female sexually abused were reported to police. 10 more interviewed sexually abused boys were never reported. Moreover, The majority of the abused boys
were within 10-18 years (school children) that did not have special habits of substance use or gambling (Belay, 2008).

4.1 Barriers to Disclose Sexual Abuse Cases

Several researchers in the area consistently identified barrier to disclosure as shame, embarrassment; regarding sexual abuse as a private matter; not thinking what has happened is a crime or not thinking it is serious enough to report to police; not wanting anyone else to know; self-blame or fearing blame by others for the attack; and wanting to protect the perpetrator, the relationship or children (Lievore, 2003; Lovett, 2004; Alaggia et al 2005; Broman-Fulks et al. 2007; Hershkowitz et al, 2007; Ullman, 2007)

4.2 Effects of Child Sexual Abuse on the Survivors

Research findings on child development have consistently revealed that children who experienced unhealthy childhood, live through hell and lead dysfunctional life (bombarded with traumatic flashback) when they are adult. The costs of child sexual abuse such as psychological, educational, social and economical are enormous, in both short and long-term of their lives. Sexual abuse can have a damaging effect on a child’s ability to develop adaptively in a broad range of areas. Researches revealed that, although not all children could show the same results, sexual abuse interferes with a child’s development in various ways: relationships with other people, self-esteem, self-confidence, physical activity, academic performance, and psychological functioning. Sexually abused children are vulnerable to developing mental health problems such as social skills deficits, posttraumatic stress disorder and other anxiety disorders, depression, or behavior problems.

4.2.1 Physical Effects

Among others, physical consequences of child sexual abuse includes itching during urination; Venereal diseases symptoms; Pain—e.g. menstrual pain, Injuries, Vomiting; Vulnerable to HIV/AIDS due to unprotected sex; Eating Disorder, and Sudden sweating (Getnet, 2007; Belay, 2008; Jibril, 2012).

4.2.2 Psychological Effects

The psychological impacts of child sexual abuse are huge and could incorporate the following: emotional mood swings (e.g., crying then laughing), Shock, denial, Irritability, anger, Impaired memory, nightmares, flashbacks, anxiety, PTSD, loss of self-esteem, loss of security, loss of trust in others/feelings of betrayal, guilt, self-blame, shame, embarrassment, degradation, loss of interest in sex, feelings of helplessness, defenselessness, feeling of humiliation, social Phobia, revenge, fear of another assault, engaging in high-risk behavior, a voiding places, activities or people that remind them of assault (Ruggiero et al, 2000; Colman et al, 2004; Getnet, 2007; Belay, 2008; Talbott et al, 2009; O’Leary et al, 2010; Jibril, 2012).

4.2.3 Social Effects

Humans in general are social animals and social skills for these beings are tools to survive and lead health live. The ideal time to establish effective relationship and develop basic social skills is during early childhood. However, sexually abused children are unlucky and face social dysfunctions such as
stigma and discrimination, feeling others are discussing them, avoiding others, shy away from others, and Social withdrawal (Belay, 2008, Jibril, 2012)

4.2.4 Academic Effects

Child sexual abuse affects not only the physiological, psychological, and social lives of the survivors, but also their educational performance. The survivors of sexual abuse are not the beneficiaries of the academic world. They rather experience class absenteeism, lack of intrinsic motivation in learning, perceiving the lessons as heavy tasks, misbehaving in classes and disturbing other children, lack of participation in classes, achieving less academically, and dropping-out from schooling (Ruggiero et al, 2000; Colman et al, 2004; Getnet, 2007; Belay, 2008; Talbott et al, 2009; O’Leary et al, 2010; Jibril, 2012)

4.3 Pedophiles: Child Hunters (Cases in Point)

Pedophiles are adults who are sexually attracted to kids.

Case I: “I enjoy young people; I love being around them.” Jerry Sandusky, Former Penn State University assistant football coach. He was found guilty on 45 charges of child sexual abuses and sentenced to serve 30-60 years in prison in 2012.

Case II: “Scream and I’ll kill you”: Pedophile’s terrifying threat as he kidnapped boy, 10, and tied him up in a cupboard and sexually assaulted him

Case III: A man who raped a baby girl and posted the pictures of the abuse on the internet was considered to be the powerful case of child sexual abuse.

4.4 Warning Signs in Children and Adolescents of Possible Child Sexual Abuse

The following are the scientifically proven warning sign to be looked into by parents and significant others for possible sexual abuses among younger children and adolescents

- Refuses to eat
- Loses or drastically increases appetite
- Has trouble swallowing.
- Leaves “clues” that seem likely to provoke a discussion about sexual issues
- Writes, draws, plays or dreams of sexual or frightening images
- Develops new or unusual fear of certain people or places
- Refuses to talk about a secret shared with an adult or older child
- Talks about a new older friend
- Suddenly has money, toys or other gifts without reason
- Thinks of self or body as repulsive, dirty or bad
- Exhibits adult-like sexual behaviors, language and knowledge
- An older child behaving like a younger child (such as bed-wetting or thumb sucking)
- Has new words for private body parts
- Resists removing clothes when appropriate times (bath, bed, toileting, diapering)
- Asks other children to behave sexually or play sexual games
- Self-injury (cutting, burning)
Inadequate personal hygiene
Drug and alcohol abuse, Sexual promiscuity
Running away from home, Depression, anxiety
Suicide attempts
Fear of intimacy or closeness
Compulsive eating or dieting


5. Conclusive Remarks

– Don’t wait for “proof” of child sexual abuse.
– Look for patterns of behavior that make children less safe.
– Keep track of behaviors that concern you.
– The most effective prevention takes place before there’s a child victim to heal or an offender to punish.
– Behaviors that routinely disrespect or ignore boundaries make children vulnerable to abuse.
– Cognitive Behavioral Therapy and Play Therapy are effective and proven techniques in treating sexually abused children
– Let the survivors catharsis their emotions. Catharsis is venting-out negative emotions: The case in point goes as “I needed to talk to just get stuff off my chest; I needed to cry, because I held it in, even with my best friend.”
– Listen without judging the abused;
– Let them know the assault(s) or abuse (s) was not their fault;
– Reassure the survivor that he/she is cared for and loved;
– Encourage the sexual assault victim to seek medical attention;
– Let them know they do not have to manage this crisis alone.

As child sexual abuse could result in serious and lifelong negative consequences on the survivors, child protection should be everyone’s responsibility

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Child Sexual Abuse: A Silent Health Emergency

Indigenous Federation: The Case of the Borana Oromo

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Abstract

Ethnographic evidence indicates that the Oromo have been practicing the gadaa system since distant past. Gadaa is a democratic political system indigenous to the Oromo. The system divides the entire male members of the society into five classes in which each rules for eight years and the leaders of the class are elective. This central aspect of system is consistent within the framework of several institutions that assist the elected leaders but also help to contain them when they abuse their authority. The system implements decentralization of power and enhances participation of citizens, social equality, transparency and accountability. This system is still a living institution among the Borana Oromo. The Borana gadaa is characterized by the prevalence of different institutions through which functions and authority are developed to autonomous moieties, sub-moieties, clan sub-clan, and etc. units; basically aims at bringing services nearest to the Borana individuals, which I would like to refer to as indigenous federations. Apart from qaallu institution and clan councils which serve in devolving power, the Borana Oromo have three gadaa councils at two levels one at the center for the entire Borana named gadaa arbora and two gadaa councils named after two major Borana clans, Hawaxu and Konitu. These two councils have a relative autonomy under the cardinal law of the Borana gadaa. Oral history traces the origin of these councils back to the second half of 18th century. The formation of the two councils were said to be a response to intra-Borana conflict. This paper, thus, draws attention to the Borana gadaa institutions as indigenous federation through which power is devolved.

Introduction

The Oromo have developed their own variety of democratic political organization that has endured since distant past. Gadaa system is at the center of this political system. Yet, as Asmarom (1973, 2000) indicates scholars on African political system have systematically ignored the study of African democracy including the gadaa system. They were partial to African monarchy. They have produced some of the deepest analysis of African kingdoms such as the Shilluk and Azande of the Sudan, the Bunyoro of Uganda, the Zulu of South Africa and the Barotse of Zambia, the Swazi of Swaziland, the Ashanti of Ghana and the Benin of Nigeria. Asmarom further discussed that compared to this body of literature on monarchy there is no comparable writing on African democracy. For instance, the British anthropologists E.E. Evans-Pritchard who is prominent in the study of political anthropology presented two fundamental types of African political institutions: monarchies (chiefdoms) on the one hand and “stateless societies” on the other. A fully democratic system of government has no place whatever in this taxonomy. Asmarom (1973, 2000) further indicates that these writers developed negative attitude toward many decentralized systems of government which they call ‘acephalous’, a
system without a head. In this view, the absence of kings, chiefs, emirs, and sultans implies not only the societies are stateless but also lawless. However, the Oromo political system with its complex laws is neither centralized political system headed by a king nor stateless without a head.

To the contrary, as Asmarom (2000) stated, the Oromo are one of the most orderly and legalistic in Black Africa and many of their institutions and laws are consciously created. They have three principal and one subsidiary institution that are the building blocks of their political system. These are: the generational system, the moiety organization, the national assembly, and the age organization. Accordingly, the Oromo polity has three heads: Gadaa leader (generational leader), qaalluu the religious leader, and hariyaa (age set leader). The leaders of these institutions are recruited in different ways and balanced against each other. Asmarom referred to this system as polycephalous—a system having a plurality of heads that hold different kinds of offices that are linked to each other by a body of laws. Oromo created a whole complex of institutional arrangements to prevent concentration of power. This paper focuses on the gadaa system in the context of Borana Oromo.

The basic objective of the paper is to describe how Borana gadaa is structured in terms of power division among moieties, sub-moieties, and clans. History indicates that the system has been taking a form of confederation and/or federation. In contemporary political studies, confederation is defined as an association of sovereign states, established for the purpose of serving some of their common interests (Assefa 2007). Since they are sovereign states they are not governed under a common constitution. Yet, it differs from alliance for it has a fixed central organ through which the common wills of its members may be expressed. Typical examples of this form of state are the former Swiss Canton, from the late medieval period until 1815, the united provinces of the Netherlands from 1579 to 1795, the 19th century German Confederation, and the American Confederation (Assefa 2007, Song).

On the other hand, federal state is a state composed of a number of similar political entities, which have a guaranteed territory and a relative political autonomy within the federation. In this case, state power is exercised at two levels: federation and the constituent members of the federation. The former exercises authority over the whole national territory and the latter exercise authority within their respective territories. Both levels are governed under a common constitution, which divides power between them. (Assefa 2007)

Even though this paper uses the term indigenous federation, it has no intention of comparing the Borana gadaa with the Western federal political system. Also, it has no intention to discuss the Borana gadaa in terms of the distinctions between political philosophy, federalism, and institutional and structural techniques of achieving federalism.\footnote{In the study of federal political system scholars make distinction between federalism and federation. According to Assefa (2007), federalism refers to a normative principle, while federation refers to the actual system of government or the tangible institutional facts.}

\footnote{In the study of federal political system scholars make distinction between federalism and federation. According to Assefa (2007), federalism refers to a normative principle, while federation refers to the actual system of government or the tangible institutional facts.}
Basically, the chapter aims at depicting Borana gadaa structure as it has been operating since distant past. Comparison between gadaa system and Western political system in terms of diffusion or colonial legacy or the policy of divide and rule, which have been implemented in different African societies, does not make sense since the system is original to Africa. Yet discussion of the philosophical base and the political institutions of the gadaa system is implicitly part of the paper.

The paper is based on ethnographic data gathered from the Borana between May 2007 and September 2010. Key informants interview, participant observation and focus group discussion were employed as instrument of data gathering. The paper has four parts: introduction, a brief overview of the gadaa system with some of its basic features, Borana gadaa federation and conclusion.

**Gadaa: An Over view**

Mohammed (1994:9) states that the term gadaa is loosely used for so many different concepts like gadaa period as measurement of time, gadaa grade and gadaa leader. Similarly, Dhadacha (2006: 7) shows that the term has different connotations, including a period of eight years during which a gadaa class stays in power. He defined the term as a specific developmental class or stage of luba through which every luba’s cyclical succession passes. Shlee (1989:6) describes gadaa as generation set system. Asmarom who meticulously studied the gadaa system provided a relatively comprehensive definition of the term. According to Asmarom (1973:8) the Gada system is a system of classes (luba) that succeed each other every eight years in assuming military, economic, political, and ritual responsibilities. Each gada class remains in power during a specific term (gada) which begins and ends with a formal power transfer cemony.

The definition indicates that the gadaa system has classes called luba, which is often termed as gadaa set. Each class controls political and ritual power for eight years. This time is also termed as gadaa period named after the name of the specific gadaa set. To understand this system we need to make a distinction between luba and gogeessa for they are often confused.

Luba refers to a specific gadaa set of one of the generation sets ruling for one gadaa period (eight years). It is often named after the gadaa leader of a particular gadaa period, like luba of so and so. On the other hand, each luba is a segment of a generation called gogeessa among the Borana Oromo and miseensa among other Oromo groups like the Macha and the Tulama. In other words, the system divides all male members of the Oromo into five sets. Membership to a given gogeessa is hereditary. All successive generations of each set have the same gogeessa. Thus gogeessa were established by the first five founders of the sets and permanent.

Each luba of the five gogeessa assumes political and ritual offices through its elected representatives for a single term that lasts for eight years. Periodic election is basic feature of the system. Each gogeessa assumes power in orderly rotation. Thus, similar gogeessa, but successive generations
(luba) of the same gogeessaa comes to power every forty years. The forty years of time is known as gadaa cycle (marsaa gadaa).

Power is equally divided among the five gogeessaa and the successive lubas of each gogeessaa. Since each gadaa gogeessaa is supposed to assume power only once within a gadaa cycle there is no inter-gogeessaa (horizontal) and/or inter-luba (inter-generation) competition over power.

These gogeessaa have different names in different parts of Oromia. Among the Borana gogeessaa are named directly after the names of the first five gadaa leaders as of the gadaa period of Gadayoo Galgaloo (1452-1460). The following table indicates some examples of the names of gogeessaa.

<table>
<thead>
<tr>
<th>Guji</th>
<th>Arsi</th>
<th>Matcha</th>
<th>Ittu</th>
<th>Tulama</th>
<th>Borana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmuufa</td>
<td>Birmajii</td>
<td>Birmajii</td>
<td>Faddata</td>
<td>Birmajii</td>
<td>Gadayoo Galgalo</td>
</tr>
<tr>
<td>Mudana</td>
<td>Bahara</td>
<td>Horata</td>
<td>Dibbaqsaa</td>
<td>Muudana</td>
<td>YaayyaFullallee</td>
</tr>
<tr>
<td>Halchiisa</td>
<td>Bultuma</td>
<td>Michillee</td>
<td>Dibeessa</td>
<td>Halchiisa</td>
<td>JaarsooBaabboo,</td>
</tr>
<tr>
<td>Roobale</td>
<td>Roobale</td>
<td>Roobale</td>
<td>Darara</td>
<td>Roobale</td>
<td>DaawwaAbbor</td>
</tr>
<tr>
<td>Dhallana</td>
<td>Horata</td>
<td>Duuloo</td>
<td>Horata</td>
<td>Malba/Horata</td>
<td>DiidaNamdur</td>
</tr>
</tbody>
</table>

In gadaa system power is transferred peacefully and only peacefully. The final power transfer ceremony is termed as baallii kennuu (handing over power) among the Borana and the Guji. Balii is an ostrich feather which the outgoing gadaa leader passes on to the incoming gadaa leader to symbolize the handing over of power. The ceremony of power transfer is part of the overall rites of passage from one gadaa grade to the next. The class which assumes political power needs to pass through different pre-gadaa grades.

Gadaa system has grades which every male member of the Oromo is supposed to pass through in his life time. The terms for these grades show slight local variations across the vast territory of Oromia. Below are some of the examples.

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Borana</th>
<th>Guji</th>
<th>Tulama-Machta</th>
<th>Ittu-Humbara</th>
<th>Siko-Mande</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dabballe</td>
<td>Suluda</td>
<td>Itti-Makoo</td>
<td>Maxxaarrii</td>
<td>Dabbalooma</td>
</tr>
<tr>
<td>2.</td>
<td>GaammeeXixiqqaa</td>
<td>DABBalle</td>
<td>Dabballe</td>
<td>Ruuboo</td>
<td>Gaammoma</td>
</tr>
<tr>
<td>3.</td>
<td>GaammeeGurguddaa</td>
<td>Kuusa</td>
<td>Foollee</td>
<td>Goobama</td>
<td>Foolloma</td>
</tr>
<tr>
<td>4.</td>
<td>Kuusa</td>
<td>Raaba</td>
<td>Qondaala</td>
<td>Raaba</td>
<td>Kuusoma</td>
</tr>
<tr>
<td>5.</td>
<td>RaabaDoorii</td>
<td>Doorii</td>
<td>Luba</td>
<td>Doorii</td>
<td>Doorama</td>
</tr>
<tr>
<td>6.</td>
<td>Gadaa</td>
<td>Gadaa</td>
<td>Luba</td>
<td>RaabaDoorii</td>
<td>Gadooma</td>
</tr>
<tr>
<td>7.</td>
<td>Yuba I</td>
<td>Yuba I</td>
<td>Guula I</td>
<td>Luba</td>
<td>Yubboma</td>
</tr>
<tr>
<td>8.</td>
<td>Yuba II</td>
<td>Yuba II</td>
<td>Guula II</td>
<td>Yuba I</td>
<td>Yubboma</td>
</tr>
<tr>
<td>9.</td>
<td>Yuba III</td>
<td>Yuba III</td>
<td>Guula III</td>
<td>Yuba II</td>
<td>Yubboma</td>
</tr>
<tr>
<td>10.</td>
<td>Yuba IV</td>
<td>Yuba IV</td>
<td>Guula IV</td>
<td>Gadamoojii</td>
<td>Yubboma</td>
</tr>
</tbody>
</table>
One of the basic rules of the system is that the newly born infant always enters into the system exactly five grades behind his father (see Asmarom 1973). This implies that the system maintains forty years of interval between the generations of father and his sons. Yet, this gap does not imply the physical age difference. It rather shows socially prescribed age difference between the two generations. In regard to the Borana Oromo who had mechanism of controlling this age gap the age difference between the two could not be less than forty, but more. Those sons born at the fortieth age of their fathers are at the appropriate age gap both physically and socially. The junior ones still maintain the social age gap despite the actual age differences provided a man begets his son before attaining his gadamojiiigadaa grade. Sons born after their father reached gadamojii are treated differently, under the name ilmaanjaarsaa (sons born to jaarsaa). Apart from this the age difference is always assumed to be forty. The difference between the physical age of the father and his sons does not mess up the prescribed age gap. In this regard, for instance, if the father is in seventh grade (Yuuba I) the son enters the second gadaa grade (junior gammee) at birth to maintain the social prescribed age difference. In this case the Borana say the child missed the first grade (dabballe).

The Gada confederation and/or federation

Gadaa system which is based on elected leadership within each generation and orderly secession to positions of political power from one generation to the next has been also practicing division of power along moieties, sub-moieties, clans and sub-clans. History indicates that the Oromo had common gadaa government with a relative freedom for the different major groups. For instance, during the sixteenth century, the Macha and the Tulama had a common Gadaa government and common law. They had their head quarter at OdaNabe in Fatager (Mohammed, 1990:41). The leaders had legitimacy of declaring war, mobilizing resources for common purposes, resolving conflicts to maintain order and concluding peace on behalf of the people. Yet each moiety had relative freedom to deal independently with its own internal affairs.

With further westward expansion of the Macha and the resultant inconveniences to use odaaNabee as their common head quarter the Macha established another confederacy. The first of this kind was the confederacy of four major Macha sub-moieties (Hoko, Tachliya, Guduru and Liban) called afree, meaning the confederacy of four (Mohammed 1990, Tsega 2008). This confederacy had its head quarter at TuteBisilOssole between Gedo and Bilbilo in the present West Shoa zone. Further the groups which moved south west established another confederacy called the saddacha confederacy (the confederacy of three). The three groups, according to Mohammed (1990), were: the Suba, Obbo and Hakako. Similarly, the Ballo of
the Bacho, BirbirsäTiya of the Soddo, the FoqaAwas of the Jiddaa, cafeéGalaan of the Galaan Oromo who had contacts but full autonomy are some examples among the Tulama Oromo. The Sadacha confederacy of WarraKarrayyu, Warra Ilu and WarraNoolee of the BarentuuOromo in the Wallo region was another but similar instance (Tsega 2008).

The same history holds true among the Guji who are still practicing gadaa confederacy. The Guji have been practicing gadaa system, in the form of confederation of three major clans: Uraga, Mattii and Hokku (Dhadacha 2006, Hinnant, Vande Loo, Tadesse 1988). Members of the confederacy are all self-independent and have full authority. The entire Guji have a common gadaa center located at Me’eeBokkoo. Me’eeBokkoo is one of the well-known scared places since the beginning of the Gujjii gadaa. Yet all the three groups have their own independent gadaacouncils with their respective ritual grounds.

The self-independence of the three Gujii gadaacouncils is depicted by the fact that each has different councils for the three gadaa grades: ya’a gadaa, ya’a doorii and ya’araabaa. The term ya’a represents council. Each council has its own leader. Further, each perceives itself as independent, but closely related for common purposes that entails the entire Guji. None of them has the power to interfere in the affairs of the other. Yet when it comes to ritual status the three gadaa leaders of the relatively independent confederacies are ranked according to their seniority. Uraga is the senior followed by the Mati and Hoku is the junior. The abbaagadaa from the Uraga group has the privilege of seniority and sitting on the right hand side. Furthermore, he has an inviolable power of blessing the opining of any gathering.

Regardless of their independency, the Gujjii gadaa is governed by the same gadaa law. Law is common for the entire Guji and can only be set by the gumiiBokkoo during the power transfer ceremony. This is one of the highest ritual ceremonies in the Gujjii gadaa. This is the occasion in which law is restated, some are amended and new ones are made. The gadaa confederacies have been established aiming at collective security, and greater social, political and economic integration.

Pertinent to the principle of power division a different version of gadaa structure is prevalent among the Borana. The Borana have practiced clan based gadaa federation.

The Borana Gadaa Federation

The Borana have three gadaa councils, often called gadaasaaddeen. They have ya’aa Arbora (arboragadaa council) at the center, and two other clan-named gadaa councils at clan level. This structure is strictly guided by the principle of power division among moieties, sub-moieties, clans and sub-clans. The system follows a system in which power is divided among Borana clans. As oral history goes, commenced as of the first quarter of 18th century the
Borana have been practicing *gadaa* federation. This time is known as the *gadaa* period of Waaqgadaayaasi, arbooraabbaabiyyaa, kontomni dame dha. Meaning ‘let Waaqa lead *gadaa*, arbora is the ruler, kontoma(Hawaxxuu and Koonnituu councils) are branches’.

To understand the guiding rule of Borana federation we need to have an overview of Borana clan structure. The Borana are divided into two exogamous moieties, sabboo and goona, often called goonaabal’aa (goona the majority). Goona is said to be senior and sabboo is junior. The sabboo moiety is divided into three major clans: Maxxarrii, Karrayyu and Digaluu. The Goona moiety is divided into two major sub-moieties, Fullalle and Harooressa. The first is divided into seven clans. These are: Dacitu, Macitu, Sirayu, Galantu, Oditu, Konitu and Bachitu. The second is also divided into seven clans which constitute Nonitu, Qarcabdu, Arsi, Maliyu, WaraJida, Dambitu and Hawaxxuu. These are further divided into different kinship categories of mana, balbala, miloo and warra (see Asmaroom 1973). There are no equivalent English terminologies to define these Oromo kinship categories. Yet one can use terms like sub-clan, lineage, minor lineage and extended families respectively.

In addition to clan structure, an overview of the available *gadaa* offices is equally important. In the system there are different offices vary in their political statuses and importance. *Hayyuu* is the term used by the Borana to refer to office holders. Focusing on the *gadaa* there are three major offices for a particular *gadaa* period. These are: *Hayyuuadulaa, hayyuumedhichaana and hayyuugarbaa*. *Hayyuuadulaa* refers to the top *gadaa* officials. Leaders of *gadaa* councils including the *abbaagadaaafixee* (prime *gadaa* leader) are from among this group. They are from the active *gadaaluba* of a particular *gogessa*. They are six in number. The second is called *hayyuumedhicha* This group is drawn from the *luba* and *gogeessaa* of the *hayyuuadulaa*. This group also constitutes six members. The third one is called *hayyuugarba*. Members of this group are drawn from the partially retired *lubaas* of any *gogeessaa*. This means individuals from any *gogeessaa* could serve as *hayyuugarba* in any

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199 Oditu is the clan in charge of qaalluufor thegoona moiety, which is also considered as the senior qaalluu of the entire Borana. This clan is not elected in the gada system at all levels.
other gogessa. Hayyuugarba are advisors. Currently, there are eighteen offices of hayyuugarba. Given the limited space this paper simply focuses on the top gadaa officials.

The system divides the six top offices between the two halves of the Borana (Saboo and goonaa). This means each moiety holds three of the six top offices. Further, within the moiety the available offices are equally shared among the clans or sub-moieties. Accordingly, the saboo moiety has three offices for hayyuadulaa. Since the saboo has three major clans each clan holds one office of hayyuadula always. Similarly, the goonaa holds three offices. Yet, since the goonaa has fourteen clans it is not possible for each clan to hold office for a particular gadaa period. Alternatively, the Borana have arranged power division for the goonaa at the level of sub-moiety (Fullaalle and Haroressaa). Each sub-moiety holds at least one office of the hayyuadulaa for every gadaa period. Yet, since the goonaa moiety has three offices at its disposal the third one goes either to the Fullaalle or Haroressaa for different gadaa periods.

The following three tables show moiety, sub moiety and clan backgrounds of the members of the top gadaa officials for three consecutive gadaa periods since 1992.


<table>
<thead>
<tr>
<th>S.No</th>
<th>Moiety</th>
<th>Sub-moiety</th>
<th>Clan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BoruuMadhaa</td>
<td>Gona</td>
<td>Haroressa</td>
</tr>
<tr>
<td>2</td>
<td>LibanOlkaa</td>
<td>Sabo</td>
<td>-------</td>
</tr>
<tr>
<td>3</td>
<td>DullachaDiidaa</td>
<td>Gona</td>
<td>Haroressa</td>
</tr>
<tr>
<td>4</td>
<td>BoruuDoyyoo</td>
<td>Sabo</td>
<td>-------</td>
</tr>
<tr>
<td>5</td>
<td>GuyyooGodanaaa</td>
<td>Gona</td>
<td>Fulalle</td>
</tr>
<tr>
<td>6</td>
<td>DiidaGodana</td>
<td>sabo</td>
<td>-------</td>
</tr>
</tbody>
</table>

Hayuadulaa for the gadaa period of LibanJaldessa (2000-2008)

<table>
<thead>
<tr>
<th>S.No</th>
<th>Moiety</th>
<th>Sub-moiety</th>
<th>Clan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LibanDaljessa</td>
<td>Gona</td>
<td>Fullaalle</td>
</tr>
<tr>
<td>2</td>
<td>JarsoBoru</td>
<td>Sabo</td>
<td>-------</td>
</tr>
<tr>
<td>3</td>
<td>Edo Galgalo</td>
<td>Gona</td>
<td>Haroressa</td>
</tr>
<tr>
<td>4</td>
<td>HalakeGarbicha</td>
<td>Sabo</td>
<td>-------</td>
</tr>
<tr>
<td>5</td>
<td>DaljessaBorbor</td>
<td>Gona</td>
<td>Fullaalle</td>
</tr>
<tr>
<td>6</td>
<td>JasoTari</td>
<td>sabo</td>
<td>-------</td>
</tr>
</tbody>
</table>
Hayuadulaa for the gadaa period of GuyyooGobba (2008-2016)

<table>
<thead>
<tr>
<th>S.No</th>
<th>Moiety</th>
<th>moeity</th>
<th>Sub-moieity</th>
<th>Clan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GuyyooGobba</td>
<td>Sabo</td>
<td>-----</td>
<td>Digalu</td>
</tr>
<tr>
<td>2</td>
<td>DaljesaDiddoo</td>
<td>Gona</td>
<td>Haroressa</td>
<td>qarcabdu</td>
</tr>
<tr>
<td>3</td>
<td>AanaGuyyoo</td>
<td>Sabo</td>
<td>-----</td>
<td>karayu</td>
</tr>
<tr>
<td>4</td>
<td>RoobaJarso</td>
<td>Gona</td>
<td>Haroressa</td>
<td>hawaxxu</td>
</tr>
<tr>
<td>5</td>
<td>QuriiLiban</td>
<td>sabo</td>
<td>-----</td>
<td>maxxarri</td>
</tr>
<tr>
<td>6</td>
<td>NuraJilo</td>
<td>Gona</td>
<td>Fullalle</td>
<td>konnitu</td>
</tr>
</tbody>
</table>

In addition to the six offices of hayyuadulaa the six offices of hayyuumedhichaa and eighteen offices of the hayyuugarbaa are distributed fairly among the Borana clans as much as possible. It is unusual to see people from the same clan holding either of these offices for a particular term of office. Apart from power sharing between the two moieties, sub-moieties and clans the Borana designed a kind of administrative self-government for the goonaabal’aa. The two sub-moieties Fullalle and Haroressa are allowed relatively self-governing gadaa councils. Hawaxxuu from Haroressa and Koonnituu from Fullalle are privileged with having their own separate gadaa councils. Accordingly, in terms of its internal structure the central council and the branches have different settings as it is indicated below.

<table>
<thead>
<tr>
<th>Council name</th>
<th>No. of HayyuAdulaa</th>
<th>HayyuMedhichaa</th>
<th>HayyuGarbaa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arboora</td>
<td>four</td>
<td>none</td>
<td>ten</td>
</tr>
<tr>
<td>Hawwaxxu</td>
<td>one</td>
<td>three</td>
<td>four</td>
</tr>
<tr>
<td>Koonnituu</td>
<td>one</td>
<td>three</td>
<td>four</td>
</tr>
</tbody>
</table>

Four out of six hayyuadulaas work inarboora council. Three of them are always from sabboo and one from goonaa. The council can be led by any one of them, except the one from Karrayyuu clan of the saboo moiety. In this case, the leader of the arbora council named as abbaagaadaafixee (prime abbagadaa) is the leader of the entire Borana gadaa. In addition ten hayyuugarbaare elected into the arboora council for a single term of office. The councils of Hawaxxu and Koonnitu, which practically represent the two sub-moieties of the goona moiety, are led by hayyuadulaa drawn from the two respective clans. In this case two adulas are always from these two clans. In each council there are three elected hayyuumedhichaa to increase the number of the councilors and to strengthen the clan named gadaa councils. For each council four hayyuugarbaa are elected.

Since the karrayyuu clan has qaalluu (religious leader), which represents the entire saboo moiety the karrayyuu are not allowed to hold the leading position in the gadaa system to avoid any concentration of power in the hands of the clan.
All the three gadaa councils are guided by Borana aadaa and seera (law and custom). They are guided by common gadaa rule which is enacted or/and amended every eight years by the general assembly, which Asmarom (1973) called assembly of the multitude. The general assembly called gumiigayoo is held at Gayo and organized by the prime abbaagadaa who is the leader of arbora council. On the other hand, the two clan named gadaa councils have the mandate to organize separate meetings called korawaarsoo. The two forms of gatherings do not only differ in terminologies but also in terms of their functions and power. General assembly (gumii) is the only law making body for the entire Borana. Yet the meetings (kora) organized by clan named gadaa councils are important in addressing vital societal issues.

According to Borana oral history the adoption of the system was a response to Borana inter-clan conflicts. Originally, it was designed for accommodating clan diversity within Borana unity in the framework of a single Borana gadaa. Latter it was justified in favor of administrative convenience, bureaucratic efficiency and power sharing.

The history of the formation of the ya’aa of Hawwaxxuu (called ya’aaWaarssoo) has something to do with conflict and conflict management. The Borana oral history confirms that the introduction of a relatively self-governing gadaa council of the Hawwaxxuu emanated from the dispute between the odituu qaalluu (religious leader) and one of the higher officials of gadaa from Hawwaxxuu clan, by the name of Huqqa Dooyyo Maalimu. The dispute between the two was aggravated. The investigation of this case of dispute finally led to the permission of a relatively self-governing branch for the Hawwaxxuu clan, under the umbrella of Borana gadaa. The role of Huqqa Doyyo in the formation of Hawwaxxuu gadaa council is still prevalent in Borana oral literature, especially in war song

Kontoma Huqqatu dhale
Huqqawuu barbaadatu dhale
Barbaadaa mata dhiiiraa keessa bokore
Bokoree guyyaa galu haati deesse wallaalte.
Meaning, Huqqaa began Kontoma gadaa
Hunting makes one skinny
Killer’s hair is decorated
Even mothers never recognize the decorated

Similarly, Borana oral history shows that Koonnituu clan was guaranteed a separate gadaa council after serious conflict between the koonnituu clan and the rest of the Borana clans. This time is known as the time of Koonnituu war. The Koonnituu clan was the most warrior group which proved military supremacy not only on the neighboring ethnic groups but also over the rest of the Borana clans. Under their prominent leader Waaqolee Boora who was also a warrior, the Koonnituu threatened all Borana clans and became an outlaw in the Borana standard. Hostility reached its highest pick. Undertake

After series dialogue that intended ending the then prevalent inter-clan conflict the Koonnituu was repatriated and joined once again the Borana gadaa with relative self-governing council. Thus, as oral
tradition goes self-government through the formation of a separate gadaa council of the Koonnituu appeared as a solution to the then existing conflict.

This was during the gadaa period of Bule Dhaddachaa (1768-1776). The first leader of the newly established Koonnituu gadaa council was Waaqolee Boraa himself. This is evidenced by Borana oral literature as it goes in their gadaa praising song of the three leaders of the Borana gadaa councils during this particular gadaa period.

Arbora Bulee Dhaddachaa, Konnituu Waaqolee Boraa, Hawaxxuu Dhaddacha Yayyaa, meaning Bulee dhachaa led Arbora, Waqolee Boraa was for Konnituu and Hawwaxuu had Dhaddacha Yaayyaa.

Since their commencements the two clan named gadaa councils are active. The establishment of separate gadaa ritual camps for the three councils is celebrated every eight years just a year before taking power. The Borana elect all the six hayu adulas before 21 years of their gadaa period (taking power). The elected hayyu establish common ritual ground or raaba mobile council after eight years. The members of the council stay together for the next twelve years before assuming gadaa power. Just when one year is left for their gadaa period the six hayyu are divided into three. The two hayyuu adulas from Hawwaxxuu and Koonnituu clans request the abbaa gadaa fiixee to allow them gadaa saying ‘gadaa nuuf kenni’. The abbaa gadaa responds as the custom dictates saying ‘gadaa siiniif hin kennu dameen siniif kenna’, meaning I will never allow you gadaa but a branch. This indicates that the Borana still maintain the unity of the gadaa but employ decentralization of gadaa power. With the permission of the abbaa gadaa the two hayyuu immediately turned to be leaders of the clan named gadaa council.

Conclusion

Gadaa is an indigenous political system that guides the economic, political and social life of the Oromo. The system has been implementing power division across moiety, sub-moieties and clans, which I referred to as indigenous federation.

Currently, federalism is often praised as one of the possible institutional tools providing a room to free exercise of local customs and religious beliefs, increases opportunities for the participation of citizens and their sense of ownership of the government. It has the potential to decrease the likelihood of conflict and has a stabilizing effect, since it allows self-governance and accommodates the claim for autonomy through compromise. It can strengthen democracy by allowing for a more accountable government that is nearer its citizens (Abate 2004:11-13, Boeckenfoerde and Dann2005:46, Todosijević 2001:80).

However, a paradox exists between praising federalism, especially identity based federalism as the optimum option in preventing ethnic conflict and the persisting ethnic conflict in the former socialist countries (Todosijević 2001:80). Drawing their data from failed federations of the former socialist countries skeptics not only have ruled out the stabilizing effect of federalism, but also have argue that
it generates conflict (Roeder 1991, Snyder 2000 cited by Siegle and Patrick 2006, Alem 2005). It is argued that federalism is vulnerable to the risk of creating a contentious atmosphere between local political leaders and the central ones. It may encourage incompatible or uncompromising political interests, which is not easily given to negotiation.

From this perspective ethnographic data from the Borana shows that the indigenous clan based federation has been in enduring since its commencement of the first quarter of 18th century. All the three Borana gadaa councils are governed under common law which provides effective provisions for internal arbitration of conflicts, access to power and resources. These provisions are of the utmost importance. Thus, it is my contention that this institutional setting of the gadaa is maintaining internal unity of the Borana clans. It has been managing clan diversities within unity without endangering the individuality of its clan identities. The power devolution and the consequent stabilizing effects of gadaa institutions are significantly important that can be taken as a model for the current endeavors in democratization processes.

References


Xiaokug Song ( ) Federalism, Confederalism and Consociationalism
Taxing Crime: The Application of Ethiopian Income Tax laws to Incomes from illegal activities

By

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Abstract
In this article the author argues that incomes from illegal sources are subject to the payment of income taxes in Ethiopia. The author has made an analysis of the definition of income provided in the income tax law and concludes that the definition of income in the proclamation is broad enough to include incomes from many sources including income from illegal sources. According to the law, in order to categorize an activity as an income the presence of the economic benefit is the solely element that has to be considered. Even though incomes from illegal sources are in principle subject to the payment of the tax either according to schedule C or alternatively schedule D, various factors, specially, problems relating to the structure of the income tax, absence of suitable declaration forms etc may create difficulty in taxing the income. Therefore, in order to enable taxpayers carry out their responsibility without incriminating themselves the tax authority has to make amendments in its declaration and other necessary formalities.

Key Words: Ethiopia, Tax, Income tax, schedules of taxpayers, gross income, taxable income, exempt income, deductible items, unlawful income, and declaration of income.

Introduction
Al Capone, the world’s best known gangster and public enemy number one, was quoted saying [t]he income tax law is a lot of bunk. The government can’t collect legal taxes from illegal money after his sentence for tax evasion in relation to incomes that he generated from illegal liquor trade.

An income tax is one of the main sources for Federal and Regional Government revenues. As its name implies an income tax is a tax on incomes not on transactions. In this short article the writer will try to identify the standing of the Ethiopian income tax laws in relation to incomes generated from illegal activities. If illegal activities are to be taxed then the writer will identify the applicable schedules in order to tax the incomes. Furthermore an identification of the rules governing deductions in relation to costs incurred in order to generate the illegal income shall also be made.

1. Taxing crime in Ethiopia

201 This article exclusively deals with the Federal Income laws; nonetheless the discussion also applies to income tax laws by regional governments as well. The definition of income in regional tax laws is also the same.

202 Alphonso (‘Al’) Capone, the notorious American crime boss, had escaped prosecution for his criminal activities but was convicted of tax evasion and received a custodial sentence. See Capone v United States, 56 F 2d 927 (1932).
In some countries courts permit taxation of incomes from illegal activities, this issue is a well established tax principle in countries like USA, Canada, UK, Australia, New Zealand and Ireland. Some scholars argue that taxing income from illegal sources will make government a silent partner in the illegal activities; therefore, the income must be free from tax and the criminal must be punished according to the criminal laws of the country. On the contrary, it is frequently argued that a dollar of profit from unlawful activity will buy just as much as a dollar of lawful profit hence the criminal should be subject to the same income tax principles applicable to those incomes considered as lawful.

In order to give a fair treatment of the issue it is better to start first by explaining some important concepts. Accordingly, first we shall defined income and then define taxable income as provided in the income tax laws and we shall finally identify the standing of Ethiopian incomes tax laws with respect to taxing income from illegal activities.

1.1. Definition of Income

Defining income is one of the trickiest problems in taxation of income. Broader definition of income will give tax administration an opportunity to collect revenues from as many revenue sources as possible while narrower definition of it is a negative to the public treasury as it curtails the taxation powers of the treasury to restricted fewer items recognized by the law as income. One of the issues relating to defining income is the identification of what an income itself is, for instance a person with a 2000 birr may use the money in order to purchase a cloth, in this case, which one is the income, the

203 David Lusty, (2003),"Taxing the untouchables who profit from organized crime", Journal of Financial Crime,Vol. 10 Iss: 3 pp. 209 . In USA there are many court decisions supporting the fact that income from illegal activity should be tax , see the following cases James v United States(366 U.S. 213 (1961). See also Bittker ‘Taxing Income from Unlawful Activities’ (1974-1975) 25 Case W. Res. L. Rev. 130 at 136. ), Commissioner of Internal Revenue v Glenshaw Glass Co.( 348 U.S. 426 (1955) ), United States v Mueller(74 F.3d 1152 ), Webb v IRS, USA(15 F.3d 203 (1st Cir. 1994) ), Blohm v Commissioner of Internal Revenue(994 F.2d 1542 (11th Cir. 1993)), In UK as can be seen from the following cases the courts tens to argue that incomes from illegal activity are taxable CIR v Delagoo Bay Cigarette Co Ltd 1918 TPD 391 at 394; Commissioner of Taxes v G 1981 (4) SA 167 (ZA) 168C-169H; CIR v Insolvent Estate Botha t/a ‘Trio Kulture’ 1990 (2) SA 548 (A) 556-557; ITC 1545, 54 SATC 464 (C) 474-5; ITC 1624, 59 SATC (T) 373 at 377-8; Minister of Finance v Smith 1927 AC 193 at 197-8; Mann v Nash (Inspector of Taxes) 1932 1 KB 752 at 757-8; Partridge v Mallandaine (1886) 18 QBD 276.


money itself or the satisfaction that the person receives from purchasing and using the purchased cloth? According to Taussig only the former can be considered as income 'all income consists in the utilities or satisfactions created.' Taussig concurs with this position when he said "We desire things at bottom because of their utility. They can impart this utility only in the shape of a succession of pleasurable sensations. These sensations are our true income." Therefore, at least for these two economists, an income is not the money itself rather the satisfaction that a person derives by using the money. Nonetheless, this definition of income is impossible to put into practice as it is difficult to assess these utilities of a person from consumption of a particular thing in financial terms. For instance how much is the benefit that a person gets from wearing his new cloth or living his newly built and furnished home. In this regard Haig argued that ‘An individual, it is true, can compare the relative worth to him of a pipe or a book or a dinner and arrange his order of consumption without the use of any formal common denominator such as money. Yet this individual would have great difficulty in telling you exactly how much satisfaction he derived from his pipe or his book. How much more difficult would it be for a second person to measure those satisfactions for him without the aid of some common unit! [Emphasis mine] Therefore as a solution Professor Taussig proposed that . . . for almost all purposes of economic study, it is best to content ourselves with a statement and an attempt at measurement, in terms not of utility but of money income.

Consequently, the definition of income suggested by many economists is this one: ‘Income is the money value of the net accretion to one's economic power between two points of time’. It will be observed that this definition departs in only one important respect from the fundamental economic conception of income as a flow of satisfactions. It defines income in terms of power to satisfy economic wants rather than in terms of the satisfactions themselves. It has the effect of taxing the recipient of income when he receives the power to attain satisfactions rather than when he elects to exercise that power.

1.2. Definition of Income in Ethiopia

The Ethiopia income tax proclamation has defined an income as: every sort of economic benefit including nonrecurring gains in cash or in kind from whatever source derived and in whatever form paid credited or received. [Emphasis added] As can be seen from the above definition, the Ethiopian income tax law has defined an income in terms of benefits received not actual money. Of course, for actual taxation purposes these economics benefits have to be changed into money income.

When it comes to the source of income, according to the law the presence of an economic benefit is the most critical factor in determination of whether a particular activity suffices as an income or not. The law made it crystal clear that the source and form of payment of the economic benefit is

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206 Taussig H, Principles of Economics (1916)134
207 Seligman, Principles of Economics(1914)16
208 Robert Haig, The Concept of Income – Economic and Legal Aspects(1921)28
209 Taussig, cited above at note 6,135
210 Robert Haig cited above at note 8,29
211 Income tax proclamation, 286/2002, See Art. 2(10).

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irrelevant in the determination of whether a particular benefit can be considered as an income or not. Accordingly, the source of the income can be generated from employment, business or it can be generated by winning lotteries. In the same token, the payment can be effected using cash or in kind. In as long as the persons receive an economic benefit then it will be considered as an income.

According to this definition, incomes from illegal sources such as dealing with illegal narcotic substances, corruption, theft and others will be considered as an income. In all these cases the person carrying out the criminal activity will get an economic benefit from the act by doing so they fulfill the only requirement needed in order to categorize their benefit as an income.

1.3 Taxable Income

The other equally important concept in imposition of tax on income is the concept of taxable income. The concept of taxable income is an important concept as it effectively defines the income tax base for a tax period. This is because in income tax, the law aims to impose duty on economic benefits generated by the person. In this regard, the taxable income is the one that most precisely reflects person’s increases in economic gains during the tax period. The general income simply defines the total economic benefit generated by the person without taking into consideration the actual costs incurred by the person in order to generate that income. The taxable income, on the other hand takes into consideration the total expenses incurred by the person in order to generate the income. Thus it precisely reflects the net worth derived by the person for the particular tax period.

The taxable income of a person for a tax period is commonly defined as the gross income of the person for the period less the total costs incurred by the person in order to generate the income. For that reason, in order to derive the taxable income we must subtract all the expenses incurred in order to generate the gross income. The gross income as defined above is the total of amounts derived by the person during the period that are subject to tax. Our law has defined taxable income as ‘the amount of income subject to tax after deduction of all expenses and other deductible items allowed under the proclamation’.

1.4 Exempt Income

There will be amounts that are not to be included in gross income of the person. These amounts are commonly referred as “exempt income.” Exempt incomes are not included in the gross income of a person and thus from the calculation of taxable income.

Tax laws may treat an income as exempt due to various reasons. First, an amount or an entity may be exempt for social reasons. An example of amounts that may be exempt on this basis is a compensation payment in case of life insurance.

Second, an amount may be exempt as a result of international convention, agreement, or practice. For example, a country that is a signatory of the Vienna Convention on Diplomatic Relations is obliged to exempt from tax the official employment income and foreign-source income of a foreign

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212 See art.2(11)
213 Chaturvedi and pithisaria’s, Income Tax Law (1998)654
214 See for instance article 13(f) of the Income tax Proclamation.
215 See art.13(c) (ii) of the proclamation
diplomatic officer, consular officer, administrative or technical employee of a diplomatic mission or consulate, consular employee, member of the service staff of a diplomatic mission or consulate, or a private servant of a diplomatic mission.\textsuperscript{216}

Third an amount may be exempt for political or administrative reasons. For instance collecting a tax from persons working in domestic duties as servants and guards is difficult to collect.\textsuperscript{217}

Finally, an amount may be exempt as an incentive to encourage a particular activity.\textsuperscript{218} For example, the income of a retirement fund may be exempt from tax to encourage retirement savings.

1.5 Deductions

The other important concept in the determination of the tax base is the issue of deductions. The general principle in case of deductions stems from the general economic principle that it is not possible to generate an income without incurring costs or all outputs require inputs of some kind and deductions are costs incurred in order to purchase these inputs. In case of deductions, a general rule followed by supplementary definition and allowance provisions is the typical approach followed by most jurisdictions. The general rule commonly allows a deduction for expenses to the extent to which they are incurred in deriving amounts included in gross income.\textsuperscript{219} Supplemental provisions allow deductions for capital allowances such as depreciation and amortization provisions and as a tax incentive such as charitable donations and retirement fund contributions.\textsuperscript{220}

1.6 Structure of Income tax

Two theoretical models exist for the structure of the personal income tax. The first one is a scheduler structure. According to this structure incomes from different sources shall be grouped into different separate schedules and taxed separately. In this approach each income under a different schedule shall be treated separately. The tax rate, exemptions, deductions and at times mode and time of payment for each schedule shall be different. Incomes are classified into different schedules mainly by using the source of income as criteria.\textsuperscript{221} The second one is a global structure, according to this structure a single tax is imposed on all income irrespective of the source of the income.\textsuperscript{222}

Ethiopia follows a scheduler approach and according to Ethiopian income tax proclamation all incomes are clustered into the following schedules:\textsuperscript{223}

Schedule ‘A’ – Income from employment

Schedule ‘B’ – Income from rental of buildings

\textsuperscript{216} The Vienna Convention on Diplomatic relation 1961, see arts.32-36

\textsuperscript{217} This income is also exempted in Ethiopia, see art.3 of the Income Tax Regulation.

\textsuperscript{218} See article 30 of the proclamation, with the intention of encouraging creativity the law exempts from the payment of tax the incomes generated in the form of award.

\textsuperscript{219} See art.20 of the Income tax proclamation

\textsuperscript{220} See art.11 of the regulation and art. 21(1) and art. 13 of the proclamation.

\textsuperscript{221} Lee Burns and Richard Krever, Individual Income Tax(1998)2

\textsuperscript{222} Ibid.

\textsuperscript{223} See art.8 of the Income tax Proclamation.
Schedule ‘C’ – Income from business
Schedule ‘D’ – Other incomes including income from
Royalties
Income paid for services rendered outside of Ethiopia
Income from games of chance
Dividends
Income from casual rental of property
Interest income
Specified non-business capital gains

All incomes generated from sources other than employment, rental of building and business shall be taxed based on schedule D.

2.1 Categories of taxpayers

Administrative convenience requires classification of taxpayers into different groups at it is not possible to extend the same treatment to all taxpayers at the same time. In addition, principle of economy also requires the tax system to concert tax efforts on those taxpayers with high revenue potential. For this purpose, taxpayers must be classified into different categories. Taxpayers are classified into three categories according to their annual turnover they generate during a particular tax year. The Ethiopian income tax law classifies taxpayers into three categories.224 Book keeping, declaration of income and other obligations differ from the taxpayer to taxpayer depending on the category they belong.

2.1.1 Category A taxpayers

Category “A” taxpayers are composed of two groups. The first group comprises of those taxpayers whose annual turnover for a single tax year is 500,000 or more.225 In addition, any company incorporated under the laws of Ethiopia is a category “A” taxpayer irrespective of their annual turnover.226 The rational for incorporating companies under category “A” irrespective of their annual turnover seems to dwell upon the idea that given the present local and international business environment by the time companies are established they must have at least 500,000 as a starting capital.227

Category “A” taxpayers are required to keep books and accounts. The books and accounts among other details must include the following228:

Gross profit and the manner in which it is computed.

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224 See art. 18 of the Income tax regulation.
225 Ibid.
226 See art.18 (1) (a) of the Regulation.
227 According to the Commercial Code the minimum capital requirements for a share company is 50,000 while for a private limited company it is only 15,000. Nonetheless for some businesses there are separate minimum capital requirements for instance for banks it is 500,000,000.
228 See article 19 of the Income tax Regulation.
General and administrative expenses
Depreciation
Provisions and reserves.
Business asset and liabilities
Date lost of acquisition and the current book value of the good.
All purchases and sales of goods and services related to the business activity, etc.

Keeping books and accounts is a mandatory requirement for Category “A” taxpayers. Consequently, failure to keep books and accounts shall result in the payment of an administrative penalty. Accordingly, if the taxpayer failed to keep books and accounts for one year he shall pay 20% of the tax assessed as an administrative penalty. If the taxpayer failed to keep proper books and accounts for consecutive two years, the license of the taxpayer will be suspended. Suspension of the license will force the taxpayer to be out of the business for the period during which the license is suspended. This penalty may extend to the extent of revoking the license of the taxpayer depending on the gravity of the act of the taxpayer. In addition to administrative penalties, failure to keep books and accounts results in determination of the tax liability of the taxpayer through estimation. The books and accounts kept by the taxpayers will later be used as a means to determine their tax liability for the tax period.

2.1.2 Category “B” Taxpayers
Category “B” taxpayers are those taxpayers with annual turnover greater than 100,000 but less than 500,000 Ethiopian Birr. Like category “A” taxpayers’, category “B” taxpayers are also required to keep proper books and accounts. Nevertheless, the books and accounts to be kept by category B taxpayers are less complicated compared to category ‘A’ taxpayers. Thus, they are required to keep an account incorporating mainly profit and loss statements for the particular year. Their income tax liability will be assessed based on the books and accounts kept by the taxpayers. The same administrative penalties apply if Category “B” taxpayers fail to keep books and accounts.

2.1.3 Category “C” Taxpayers
Category “C” is the third and the last category. Small businesses are the main types of businesses incorporated in this category. All taxpayers with annual turnover income less than 100,000 Ethiopian Birr are grouped as category ‘C’ taxpayers. These categories of taxpayers are not required to keep...
books and accounts. Their income tax liability shall be determined through a special procedure known as presumptive taxation. 240

3. Modes of taxing income from illegal sources in Ethiopia

Incomes from illegal sources can be taxed using one of the modes:

- Incomes from illegal sources as a business
- Incomes from illegal sources as other income

3.1. Income from illegal sources as a business income

As identified above, the Ethiopian tax system follows a schedular structure. As a result in order to levy tax on a particular item one must first identify the applicable schedule for that particular income. Regarding income from illegal activities, the activity itself has not been clearly designated in any of the schedules as an income. However, given the nature of the activity, we can consider it as business, as defined in article 2(6) of the proclamation. The income tax proclamation has defined business as ‘any industrial, commercial professional or vocational activity or any other activity recognized as trade by the Commercial Code of Ethiopia and carried on by any person for profit.’ According to the above definition, profit is an important element that must be satisfied in order to consider a particular activity as a business or trade. In addition to profit, the activity must be of commercial professional, vocational or any other activity recognized as a business by the Commercial Code of Ethiopia.

Regarding illegal activities for obvious reason every thief makes a cost benefit analysis before embarking on his activity. That means, if the costs that he is going to spend in order to carry out a particular crime are much greater than the expected returns, the person will definitely not carry out the task, therefore, one can argue that profit is an element which is installed in every illegal activity. For without a profit they could not have carried the act. For that matter, not only that there should be a profit, in some of the cases even the profit margin has to be big enough in order to merit the particular risk associated with risk. If the profit element is satisfied then the next issue would be identifying whether the illegal activities in general are professional commercial or vocational. Crime activity has not been recognized in the commercial code as trades hence no need to go there as such.

Article 2(6) while defining business, has not further defined those terms like that of professional commercial activity and vocational activity. This in my opinion is a right approach as it would be impossible to provide a clear and workable definition of profession that could be applicable for all areas. I think that is why, Cogan in his earlier writings regarding profession started his work by saying ‘to define profession is to invite controversy.’ 241 Therefore, it is of the opinion of the author that terms like professional commercial activity or vocational activity must be construed broadly and loosely. In my opinion for any analysis of profession only four from the six criteria earlier laid down by Flexner should be used, accordingly, a profession is an activity 242 requiring intellectual operations coupled

240 See the attached schedules at the back of the Income tax Regulation.
with large individual responsibilities, practical application, tendency toward self-organization, and increasingly altruistic motivation\textsuperscript{243} hence any person including a thief, drug dealer, serial killer etc could be considered as professional in as long as their work fulfills the above criteria. Accordingly a thief or drug dealer will be no less organized than a an ordinary trader or a person engaged in import or export activity albeit that it requires some kind of expertise depending on the crimes to be committed for instance a person hired to kill must know how to operate a gun hence a professional in the area. Therefore, criminal activities in this regard are commercial professional activities conducted for profit, therefore, taxable according to schedule C.

The rate to be applied would be of course subject to the person conducting the activity. For instance if the criminal activity is conducted by an organization then the income would be taxed at a flat rate of 30 \% and if it is conducted by an individual it would be taxed according to the schedule provided in article 19(2) of the proclamation.

\subsection*{3.1.1 Deductible expenses}

The next important issue in taxation of income from illegal activity is the availability of deductions for their ‘businesses’. In simple terms is it possible to deduct the cost of a bullet for hired killer as it is cost of running his business or income. So far as the Ethiopian tax law is concerned the answer is a definite YES. This is because as provided in the income tax laws taxpayers are required to pay tax only from their taxable income, therefore, in as long as their income is subject to the tax their should get the same treatment. Hence all costs incurred for the purpose of securing the income must be deducted. In simple terms, the burglar who purchased flashlight, drilling materials and rented a car in order to transport of the stolen goods will have the right to get deductions for the costs incurred since all these costs are incurred in order to generate the particular income.

\subsection*{3.2 Income from illegal sources as other income}

The Ethiopian tax system follows a schedular approach whereby income from various sources shall be treated and taxed separately. As provided in the proclamation incomes other than incomes from rental of buildings, employment and business shall be taxed separately, the heading of article 8(4) says ‘other income including income from’ and lists down the incomes that could be taxed according to schedule D. As can be seen from the heading, the list is enumerative not exhaustive, therefore, it is possible to levy tax on income based on schedule D, when it is not possible to levy tax according to the previous schedules in as long as the individual has received an economic benefit from the activity or income.

Therefore in case of income generated from illegal sources it quite possible to levy tax on the income based on schedule D. Nonetheless since schedule D has not provided the rate and modes of payment for other incomes other than those stated in the proclamation it would be possible to put it into practice.

\section*{4. Taxation of Income vs Confiscation of Property}

Confiscation of property is one of the punishments provided under Ethiopian laws. In this regard for instance the new anti Corruption procedure provides the following: ‘The court shall issue a
confiscation order proportionate to the property acquired by the corruption offence, where the accused is found guilty.244 According to this law, the criminal shall be forced to return the property acquired from the commission of the crime and the benefits derived from those properties to the government, similar provision also exists in the Criminal Code.245 Confiscation rules aim at preventing criminals from being able to enjoy the fruits of their crimes by depriving them of the proceeds and benefits gained from criminal conduct.

The presence of confiscation rules makes taxation of incomes from illegal activity more complicated as confiscation takes away the income and the fruits of the crime from the criminal. There are persons who argue that government must not resort to taxing income from illegal sources when it is possible to confiscate the whole amount. In my opinion these should not be the case, firstly, the criminal code and the tax law have distinct objectives. It is not the objective of the tax law to punish the criminal for his act; this is something to be taken care of by the criminal code.246 In the tax law, collecting tax from individuals getting an economic benefit is the main objective, not punishment. Hence, any comparison between the tax law and confiscation is inappropriate.

Furthermore, it is a truism that confiscation rules take away properties at the hands of the taxpayer when arrested by the law enforcement authorities. Nonetheless, it cannot go back and confiscate the incomes already consumed by the criminal, thus, making the punishments partial. For instance Mr. X started to lend money to people without having a license from the National Bank of Ethiopia in 2000 Ethiopian calendar. Every year, he has been profiting 10,000 from the activity. Let us further assume that he had consumed half of the income and saved only the rest. If the law enforcement authorities apprehend him after five years, out of the total 50,000 income generated from the activity only 25,000 or money at the hand of the criminal can be subject to confiscation of property rule, the amount consumed by the criminal before being caught would be out of the realm of the rule. Therefore, taxing income from illegal sources by collecting taxes, fines and administrative penalties from previously consumed incomes can compliment the effective implementation the criminal code.

5. Declaration income vs. the right against self incrimination

The income tax laws require taxpayers to declare their income during the fixed time provided in the proclamation.247 During the declaration income, taxpayers are required to submit the balance sheet and profit and loss account of the business for that tax year.248 Declaration period differ from category to category. Accordingly, category “A” taxpayers are required to declare their income within 4 months from the end of the taxpayer’s tax year.249 On the other hand,

244 Revised Anti-Corruption Special Procedure and Rules of Evidence Proclamation 434/2005 , art.29
245 Proclamation 414/2004 art.98
246 The Ethiopian Criminal Code in addition to punishment has also other objectives , see the preamble of the Criminal Code
247 See art.66 of the Income tax Proclamation, A person who receives his income exclusively from single employer and a Schedule D taxpayers whose tax is to be paid through a withholding method are not required to personally declare their income-see art.65 and 31-37 of the Income tax proclamation.
248 Id.art.66(1)
category “B” taxpayers are required to declare their income within two months from the taxpayers’ tax year.\textsuperscript{250}

In order to declare their income within the given period taxpayers must first know their tax year. Only then can declare their income either within 4 months or within 2 months of the tax year depending on the category they belong.

Tax year is defined in article 64(2) of the proclamation. Accordingly the tax year of a person is:
In case of an individual or an association of individuals, the fiscal year.
In case of a body, the accounting year of the body.

Hence, as provided in article 64(2) of the proclamation an individual or association of individual the tax year is the fiscal year of the country. The fiscal year as defined in article 2(15) of the proclamation is the budget year of the country. The budget year starts in Hamale 1 and ends in Sene 30. Therefore, if the taxpayer is a category ‘A’ the taxpayer shall declare his income within four months from 30\textsuperscript{th} of Sene and within two months of this period in case of category “B” tax payers.

In case of a body, their tax year is the accounting year of the body. The accounting year of the body will be determined through their respective memorandum of association. The memorandum of association determines the beginning and end of the accounting year. The body will declare its income within 4 months if it is category ‘A’ and within 2 months in case of category ‘B’ from the end of the accounting determined by the memorandum of association of the company.

In case of category C taxpayers, they are required to make tax payment between 7\textsuperscript{th} of July and 6\textsuperscript{th} of August every year.\textsuperscript{251} These groups of taxpayers are not required to keep books and accounts. Tax assessment in case of these group taxpayers shall be made based on presumptive taxations.

According to this provisions category ‘A’ and ‘B’ are required to declare their income to the tax authority using declaration forms prepared by the tax authority. In the declaration form there are only three spaces to be filled while declaring incomes of a particular taxpayer; these are local sales, export sales and service incomes.\textsuperscript{252} The declaration forms leave no space for incomes from illegal sources thus making declaration of income impossible. the appropriate remedy in this case is to provide one line for miscellaneous incomes. This way the taxpayer can easily declare his income using the declaration forms.

Taxpayers with duty to declare are also duty bound to keep books and accounts and during declaration the books and accounts must be presented with the declaration forms to be filled by the taxpayer. In case of incomes from illegal sources they may keep books and accounts, however forcing them to make these books and accounts surrender to the tax authority shall be against the constitutional provision that provides for the right of persons’ \textit{not be compelled to make confessions or admission}.

\textsuperscript{249} Id.art.66(1)(a)
\textsuperscript{250} Id.art.66(1)(b)
\textsuperscript{251} Ibid.
\textsuperscript{252} See Income Tax declaration form for Schedule C taxpayers especially Section 3, available at the official website of the Ethiopian Revenue and Customs Authority and can be accessed using \url{http://www.erca.gov.et/index.jsp?id=documentation&menu_id=102&menu_ch_id=0}
which could be used in evidence against them and it would make the whole point of taxing illegal income pointless. Therefore, to make the system workable the courts should interpret the last provision of the Constitution that provides for ‘Statements obtained under coercion shall not be admitted as evidence’ and in the process making all evidences gathered from the accounts kept by the person inadmissible during criminal proceedings.

6. Taxing crime v double jeopardy

Many constitutions including ours extend the double jeopardy protection rules to accused. According to this rule accused cannot be tried for the same offense after conviction or acquittal. By doing so the rule protects the accused from double trial, double conviction and multiple punishments. Accordingly, many people argue that imposing tax on crimes derived from the criminal activity will amount as double jeopardy.

However, one must always keep in mind that taxation is not a penalty on a any person, tax is a contribution expected from a citizens so that government can provide the necessary goods and services to citizens. In income tax people with ability to pay are being asked to pay their fair share of contribution to the government. When a criminal is apprehended the criminal law punishes him for the wrongful act on the other hand, what the income tax does is simply collect the money the criminal should have paid to the government. In income tax law the person is not being prosecuted for the crime but he is simply being asked to make his overdue contribution to the government. As double jeopardy cannot protect a negligent driver who killed a passenger from being prosecuted under criminal law for his crime and tort law at the same time, the same should be applicable to criminal prosecution and taxing crime, these two laws aim at achieving completely different objective. Therefore punishment for both criminal offense and taxing crime don’t violate double jeopardy because each has element that the other does not have.

7. Recent Court practices in taxation of illegal Incomes in Ethiopia

Recently many courts cases relating to taxation of incomes from illegal sources are appearing in Ethiopia. In two famous cases the Federal Revenue and Customs authority brought a case against individuals caught violating the law regarding illegal money lending. According Ethiopian law a person need to have the permission from the National Bank of Ethiopia in order to engage in activities reserved for financial services. One of such a service is lending money. Even when persons secure permission from the National Bank of Ethiopia in order to lend money they must do so by observing the lending rates set by the National Bank. And in all three cases individuals were caught violating these two laws.

In addition to the criminal punishments against these persons the Federal Customs and revenue authority requested the court for the payment of unpaid income and Value Added Tax by persons. The authority in its pleading argued that the defendants failed to pay income tax from their activities and had requested the court for the payment of the unpaid tax and interest on those incomes. The courts

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254 Id.
255 See art.23 of the Constitution
without further investing the issue had simply ordered the defendants for the payment of the unpaid income tax and interest on those incomes.  

Before this decision the highest court of the country has passed a decision on issue directly affecting the definition of income. In a case between Ministry of Justice and six other persons the court decided that incomes paid to individuals in the form of compensation when reduced from their work is not subject to the payment of the tax. In its reasoning the court argued that: ‘after looking at articles 2(10) and 11 of the proclamation it has found no ground to consider that above payments as an income ’. [Translation mine]  

The court instead of concluding in general terms should have first analyzed the definition of income as provided in article 2(10) of the income tax proclamation. As discussed above, the definition of our income is broad enough to include any payment as an income, in as long as the recipients of the payments derived an economic benefit from it. In this case the recipients have received an economic benefit from their payments, therefore, payments made to them can be considered as an income for income tax purpose. In my opinion, the court has made a serious mistake by looking other matters than the economic benefit derived by the persons.  

Conclusion  

Incomes from illegal sources are taxable incomes according to Ethiopian tax laws. Income from illegal sources can be subject to schedule ‘C’ or ‘D’. To facilitate tax payment and fair contribution of their share to the production of public goods and services by the government these groups of the taxpayers must be given an opportunity to declare their income without providing self incriminating information to public authorities. In order to enable the person declare his income, the tax declaration forms must be modified in such a manner to include the person carry out his responsibilities by reproducing additional declaration forms or even including spaces that can be used by persons who derive their income from such ‘business’.

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256 In Ethiopia is only the decision of the Cassation Bench that has a binding authority. Hence these decisions by the high court can only be as indicators of the path being followed by the lower courts in Ethiopia., Ayele Debela Ta Authority Appeal Sentence , Vol.10,No599  
257 Ministry of Justice Ethiopia v Takle Garedeaw and six others, file no.65330,VOL.11
Envisaging Forests: Ethnography of People-Forest Interactions and Execution of State Policies in Horro Guduru, Northwestern Oromia

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Abstract

Ethnographers have been developing a rising interest in environmental concerns at least since the last six decades. This long-lasting ethnographic attention to the wider environment has resulted in focusing research priorities on the interrelationship between environment, society, and culture. The focus of the present ethnographic research was on people-forest interactions and execution of state policies in Horro Guduru. Data were generated through practical observations of 11 deforested and degraded forest sites as well as 3 sacred sites in 2 sample districts, 4 key informants’ interviews, 3 focus group discussions, 24 individual interviews, and analysis of relevant official documents. Results indicate that forest resources are essential resources in local livelihood systems. Forests as vital resources base several basic necessities such as shelter and food in Horro Guduru. This indicates that the most important thing is not the rural residence houses as such, but the forest resources underneath these resources. But the area has been recording increasing deforestation from time to time because of multidimensional factors. Lack of appropriate land use system and effectual forest policy on the part of the state and strive to meet basic necessities, above all food and shelter by the local community, appear the most impinging factors. Thus, the implication here is that almost everyone, the state and the local people as well, has equally been part of the problem. Although the current state of Ethiopia has made several unprecedented attempts to conserve forest resources, which could be envisioned as prototypes of the more autonomous “forestism” to come, the efforts made thus far have less likely been effective. However, there existed a good beginning in adopting necessary formal institutions. Besides, a positive correlation has been prevailing between Oromo cultural ecology and natural forest and tree sustainability. If the current good beginning and the ethos of Oromo cultural ecology blossom in mutual resilience, a breakthrough in sustainable forest industry would be easily visualized.

Keywords: Forest, deforestation, ecotone, ecozone, Horro Guduru

Introduction

Research priorities in environmental issues (e.g. forests) focus on the interrelationship between society, culture and environment (Ellen 2011).

Studies enunciate manifold importance of forests to local livelihoods (Miller 1990, Milton 1996, Sutton and Anderson 2004). Forests are immensely valuable to life systems in general and humans in particular. Unlike other creatures, humans do not make mere use of forest resources as natural as they
are. Humans modify and utilise forest resources for various purposes through cultural mediation. This could be one of the reasons why people interact with forests.

People interact with forests mainly because of their functions (Chart 1).

![Chart 1: Designated functions of forests, 2010 (%)](chart.png)

Source: FRA 2010

According to FRA (2010), in the world the productive functions (30 percent) of forests involve wood and non-wood forest products. Protective functions (8 percent) of forests are related to soil and water resources which involve conservation of water, filtering of water pollutants and protection of soil. This is apart from their conservation of biodiversity (12 percent).

Forests conserve water by increasing infiltration, reducing runoff velocity and surface erosion, and decreasing sedimentation which is relevant behind dams, irrigation systems.

Forests filter water pollutants by regulating water yield and flow, moderating floods, enhancing precipitation, etc. Forests protect soils from wind and water erosion, coastal protection, avalanche control, and serve as air pollution filters.

The socio-economic functions (4 percent) of forests range from easily quantified economic values associated with forest products to less tangible services and contributions to society. Forests support the poor in reducing poverty and their vulnerability to economic and environmental shocks. Employment in forestry is an indicator of both the social and economic value of the sector to society. Other social/cultural services which forests provide: specific forest areas for recreation, tourism, education, research and for the conservation of cultural or spiritual sites and heritages.
Still more about 23 percent of the functions forests provide are not yet clearly discerned though their multiple functions are attempted to have been estimated at about 24 percent globally.

In this paper, forest refers to an area of land extending at least for half hectares bearing large trees and diverse plant species which does not embrace other predominant land use. Policy refers to a formal framework devised for achieving a balance between competing demands that are acceptable to all the different stakeholders.

As to this definition, the current forest cover in the world is increasing, but the Ethiopian case does not show similar trend as it appears even diminishing (Figures 1&2).

**Figure 1: World forest cover by year (billion ha)**

| Year | Coverage 
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>3.4</td>
</tr>
<tr>
<td>2000</td>
<td>3.9</td>
</tr>
<tr>
<td>2010</td>
<td>4.0</td>
</tr>
</tbody>
</table>

*Source: FRA 1990, 2000, 2010*

**Figure 2: Ethiopia's forest status over years (%)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>40%</td>
</tr>
<tr>
<td>1950</td>
<td>16%</td>
</tr>
<tr>
<td>2002</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

*Source: Getachew, 2005*

**Problem Statement**
The research work sets out mainly from practical observations made across the cultural ecology of the Oromo of Horro Guduru. It deals with forest resources, their deforestation, and state as well as local peoples’ customary interactions with these resources.

The Field Areas
Aims and Objectives

To comprehend the resourcefulness of forests/trees in Horro Guduru,

To examine the realm of deforestation (if any) by identifying major factors for deforestation,

To assess the knowledge, formulation and implementation of forest policy (if any), and appraise it in view of some other interlinked policies in relation to forest resources protection and utilization,

To understand some customary domains attached to forests/trees among the people of Horro Guduru, and

To examine possible ways of envisaging forests.

Guiding Questions

Are forests resources? How do forests become resources in relation to local realities? Or, what indicators are there to view forests as resources?

What factors are responsible for deforestation (if any)?

Is there effective forest policy regarding forest resources utilisation and protection? If yes, how far has been the effectiveness? If not, why and what should be done to make it effective?
Are there useful and effective customary practices in forest resources protection and utilisation? If yes, how do they become useful? If not, why and what should be done to make them useful and effective?

Is it possible to envisage forests in Horro Guduru?

**Sampling Techniques**

The present study encompassed the entire Oromo population spread over two field areas of Horro Guduru: Abee Dongoro and Horro districts. Since it is implausible to cover the entire population of study, a sample of 3 focus groups, 24 individual interviews, and 4 key informants from the field areas were chosen through purposive and snow-ball sampling for the purpose of data collection.

**Tools of Data Collection**

- Interview guide
- Observations (participant and non-participant)
- Analysis of documents

**Results and Discussions**

**Multiple Functions of Forests Intrigue People to Interact with Forests**

Forests as essential resources in Oromo customary life

Forests are essential resources in Oromo customary life, at least in the following cultural domains:

1. Construction technology
2. Cottage industry
3. Agricultural technology
4. Household equipments
5. Instruments for traditional music and games
6. Weaponry tools
7. Tools for personal hygiene

These highly ensembled cultural domains would have less likely existed and even continue to pervade Oromo social, economic, and political life much less in the absence of forest resources. Plates 1 to 7 demonstrate the empirical observations garnered during the fieldwork period among the Oromo of Horro Guduru. In fact, comprehensive and distilled analysis and interpretation on these observation results is not attempted for the gamut of this paper is limited to understand the way forests are envisaged in view of customary practices and state interactions with forests in Horro Guduru. But the observations displayed through these plates plainly show that forests have been and persist in to be essentials in establishing and sustaining local livelihoods among the rural-agricultural communities. Forests have got other functions such as ecological, socioeconomic, medicinal, and cultural but this paper did not concern these sweeping utility of forests. All the plates demonstrated below are
originated from the fieldwork observation conducted in Horro Guduru in 2009 and 2011 focusing on local level forest utilities.
Plate 2: Some forest dependent tools used in Oromo’s traditional cottage industry

*Cottage Industry*

*Cotton Industry*

*Cotton Refiner or Bow*

*Daamacaa jirbi* (wooden lever used to separate cotton from its berries)

Plate 3: Forest dependent traditional agricultural implements

A = Dallaa (kraal)
B = Wasajoo (yoke)
C = Huasha (neck-holder)
D = Harkistuu (puller)
E = Gindii (beam)
F = Hordae (share holder)
G = Dhitto (rope)
H = Sabafetee (side-wing)
I = Qemttee (basket)
J = Qufttoo (big axe)
K = Gajamoo (Machete)
L = Haamtuu (sickle)
M = Maakko (small axe)
N = Carabbi (woolen broom)
Proceedings of the Fourth Annual Research Conference of Jimma University

Plate 4: Wooden household equipments

Harkee (wooden food servers)

Mooyyes bunaa (mortar) and other utensils

Boraatii kal’ee (leather pillow)

Boraatii mukaa (wooden pillow)

Xaaasa (wooden cups)

Carpenters crafting bed, bench and chair

Li’oo (wooden plate, a unit for measuring grain)

Ro’oo (wooden milk stirrer)

Mekarajji (wooden kettle)

Chair curved from huge tree, not timber

Weaponry Tools

Bow

Baaxoo (javelin)

Waxzee (arrows)

Plate 5: Forest dependent weaponry tools

Shattle

Cuupheee (cutlass)
Envisaging Restoration of Forests

Tools for Personal Hygiene

7: Some wooden tools for personal hygiene
Evidently, forest land size has been decreasing in Horro Guduru since the early Oromo inhabition of the area in the mid 1370s. According to interview results, this period signals the first large scale deforestation period in Horro Guduru for the Oromo had engaged in aggressive domestication of the then inhospitable dense natural forest panorama of the area. Another large scale deforestation and more destructive activity was said to have been occurred during the imperial era as the forests of the area were subjected to expansive crop cultivation for the imperial lords by free labor of the local community. In recent decades, two large scale deforestation activities were recorded in Horro Guduru. One was during the military regime when the Wolloyyee people from northeast Ethiopia were compelled to resettle inside and beside natural forests in different areas in Horro Guduru. The second one belongs to the recent large scale deforestation practices which have been occurring in response to landlessness of emerging young generation who have been engaging in clearing of forests for agricultural land expansion. Perhaps due to recognition of these anomalies, the current practice in the area shows that forest is being envisaged for several reasons. First, there is growing awareness among the local community on the multiple values of forests which is in part due to the changing climatic condition from nearly highland to mid-highland temperature and in some cases to semi-desert conditions. Second, some large natural forest resources are being protected (Tulluu Laaftoo=16686 ha, Caato=11900 ha, Qonge=120 ha, and in Jaardagaa Jaartee district about 1642 ha of diverse forest patches) =30,348 ha in total. Finally, new and relevant forest institutions and their commitments are being established. Coupled with the potential of Horro Guduru mountainous and large sloppy areas, these can be envisioned as models for the more autonomous forestry institutions and more greener and productive forest resources industry to come.

**Forest Policy and Protected Forest Areas in Horro Guduru**

Interview results gathered from a total of 46 informants provided the following consolidated data (Charts 1 to 3) regarding the issue of forest policy in Horro Guduru. Accordingly, about 58 percent of the informants said that they knew forest policy since 2007 while 40 percent said that they knew forest policy since 1991. Nevertheless, some key informants admit that Ethiopia has no forest policy until very recently so that the concept might not have been ingrained into the grassroots until recently. In this regard, the claim of those 40 percent informants—who were entirely local experts and authorities—seems either more of erroneous or misconception of the research question addressed to them. However, since the inquiry technique was semi-structured interviews there was opportunity to solicit further information on such doubts and contradictions perceived during the research process. Actually, it was because of the semi-structured plan of the interviews that the research question on the preceding concept was accompanied by a specific query to understand whether forest policy in Horro Guduru was widely known or not over years. Some informants strongly assert that they knew it since the coming to power of the current government while some seem to confuse forest policy with agricultural policy.

As indicated in Chart 2, there are diverse, but nearly with close proportion, views about local people’s involvement in forest policy formulation. About one-fourth (24.32 per cent) of them claimed that
there has been effective local peoples’ participation in forest policy formulation while slightly more than one-fifth (21.62 per cent) claim that there has been no local peoples’ participation in this regard. As regards to the implementation of forest policy in Horro Guduru, slightly less than two-sixth (31 per cent) of these informants nevertheless claimed that there has been no effective implementation of forest policy despite its existence in the area at least since 1991. Slightly less than one-fourth (22.97 per cent) claimed that there has been effective implementation of forest policy in Horro Guduru.

Cross-check of these data through semi-structured interviews with this group of informants show that what was considered as forest policy and local peoples’ participation in its formulation was forest proclamations and elected representatives of the local community respectively. That is, despite lack of appropriate forest policy even at the country level in Ethiopia till 2007 (Melaku 2008), forest proclamations were being considered as forest policies at local levels by local authorities and experts. Devising these proclamations has been assumed to have engaged representatives of local people at Oromia regional state government council. Additionally, the effective implementation of forest policy
often assumed by these informants was the recognition given to some natural forests in Horro Guduru as “protected” natural forest areas. According to the local authorities and experts, two natural forest areas, Caato and Tulluu Laaftoo, have been protected due to effective forest policy enforcements being done through local experts and institutions. Still, however, the local understanding and recognition about “protected” natural forest areas need to be inquired (Chart 3).

The data displayed in Chart 3 were resulted from a combination of interview responses with all sample informants and the key informants as well. Accordingly, about 27 percent of the informants claim that they did not know any protected natural forest in Horro Guduru. But about 28 percent of the informants claim that the effectiveness of protected natural forest areas was very good while nearly the same percent, 27 percent, counter-argued that the protection was very poor. Still, some 44 percent of the informants claim that the effectiveness was satisfactory. Cross-check of interviews with some of these responses reveals that Caato and Tulluu Laaftoo natural forests of Horro Guduru were protected by the state since 1986 and 2009 respectively. This implies that the notion of state owned natural forest protection is almost widely known in Horro Guduru.

Overall, although forest policy stupor in Ethiopia has likely been resolved since the past half decade, much more remains in its implementation. Both the formal land use system and local level people’s interaction with forests still reveal the old story. Effective land use system, which might serve sustainable protection and utilization of forest resources, is lacking. In effect, agricultural fields adjacent to forest ecozones have been expanding into the areas ever claimed by forest resources. The assertion drawn from this scenario could be that deforestation and forest degradation have been pervasive and lingering witnessing petty consideration being given to sustainable protection and utilization of forest resources. Usually, execution of agricultural policy predominate any other policy attempt in Horro Guduru and there was little or no cross-sectoral link among forest related policy issues such as environmental policy.

Local Customs and Natural Forests/Trees among the Oromo of Horro Guduru
Although multifaceted customary practices which have been in tune with the concept of sustainable utilization of forests/trees are expected among the Oromo of Horro Guduru, this study has identified three major worldviews of such domain among the people. These worldviews exclusively center on natural forests/trees, not social forestry or plantations. In Oromo worldview, natural forests/trees are blessings from Waaqa (God), source of life, and have safuu (propriety) and ayyaana (guardian spirit). Forests/trees as blessings from Waaqa need to be utilized keeping Waaqa’s order of stewardship that man has to tame and further develop natural entities bestowed upon humanity for eternity. For the key informants, forests/trees are not mere blessings but source of life as life without green plants is unthinkable. Moreover, the key informants believe that every creature including forests/trees is endowed with propriety or respect and protector or guardian spirit which calls for judicious approach to natural forests/trees, not destruction to meet human greeds. In most cases, forests/trees believed to have been endowed with safuu and ayyaana are considered sacred, and that they need to be protected from every non-religious human activities.

Typical sacred forests which meet the above assertion in Horro Guduru include the only gigantic sacred forest in the area known as Caato (Map 1) and Odaa Bulluk and Burqaa Urgoo in the past. Besides these relatively gigantic sacred forest panoramas in Horro Guduru, there are numerous sacred trees (Table 1) which testify the harmonious nature of Oromo customary practice for sustainable conservation of forests/trees.

Map 1: Caato Sacred Forest

Source: Adapted from EMA 1982
What determines the sacredness of a given natural tree species is the belief that it is endowed with special *ayyaana*. Sacred forests, groves and trees are, by their very existence, rooted in indigenous religious beliefs (as were being respected on the basis of their *safiuu* and *ayyaana*). Their very existence and believed power sustains local belief systems attached to them. Consistent with other studies, the importance of sacred forests, groves and trees can be exemplified as ecological (conservation of biodiversity), economic (sources of natural wealth), political (local political structure) and social (cultural and religious) in nature (UNESCO 2003, Githitho 2003, Kala and Aruna 2010).

Table 1: Sacred Trees in Horro Guduru

<table>
<thead>
<tr>
<th>Tree species</th>
<th>Sacred tree example(s)</th>
<th>Specific location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baddeessaa (<em>Syzygium guineense</em>)</td>
<td>Baddeessaa Barjii</td>
<td>Aliiboo town</td>
</tr>
<tr>
<td>Birbirsa (<em>Podocarpus procera</em>)</td>
<td>Birbirsa Kormaa</td>
<td>Daaddoo</td>
</tr>
<tr>
<td></td>
<td>Birbirsa Galat</td>
<td>Wabbo</td>
</tr>
<tr>
<td>Ejersa (<em>Prunus africanum</em>)</td>
<td>Ejersa Burqaa</td>
<td>Bonee Abuuna</td>
</tr>
<tr>
<td></td>
<td>Ejersa Bokkuu</td>
<td>Haroo Lagoo</td>
</tr>
<tr>
<td>Harbuu (<em>Ficus sur</em>)</td>
<td>Harbuu Jaarii</td>
<td>Tulluu Waayyyu town</td>
</tr>
<tr>
<td></td>
<td>Harbuu Jaarii</td>
<td>Somboo Kumii</td>
</tr>
<tr>
<td></td>
<td>Harbuu Shewa</td>
<td>Odaa Bulluq</td>
</tr>
<tr>
<td></td>
<td>Harbuu Buchuuree</td>
<td>Odaa Bulluq</td>
</tr>
<tr>
<td>Hoomii (<em>Pygeum africanum</em>)</td>
<td>Hoomii Dhereaa</td>
<td>Odaa Bulluq</td>
</tr>
<tr>
<td>Laaftoo (<em>Acacia albida</em>)</td>
<td>Laaftoo Gooban Suuloo</td>
<td>Bonee Abuuna</td>
</tr>
<tr>
<td>Qilxuu (<em>Ficus vasta</em>)</td>
<td>Qilxuu Seeraa</td>
<td>Daarge Kooticha</td>
</tr>
<tr>
<td>Somboo (<em>Ekeberigia capensis</em>)</td>
<td>Somboo Ushee</td>
<td>Abuuna</td>
</tr>
<tr>
<td></td>
<td>Somboo Abbaa Namaa</td>
<td>Ejersa Macca</td>
</tr>
</tbody>
</table>
Forest Sustainability in Oromo Cultural Ecology

Not only sacred forests/trees but also other cultural activities like *huussoo* agriculture (shifting cultivation), practice of native agro-forestry and exclusive stipulation for *kistaana* (natural forests, groves and trees protected for funeral purpose) are all practical examples endorsing the concept and theory of forest sustainability in Oromo customary practices. Plate 8 shows one of the living examples of *kistaana* among the Oromo of Horro Guduru. As it can be unambiguously observed from this plate, the surrounding areas of *kistaana* are subject to cultivation but the *kistaana* alone. This implies that at the expense of greed rove for agricultural land expansion the places used for *kistaana* remain intact ensuring the principle of sustainability and environmental stewardship.

Conclusion

Forest resources are essential resources. Just the way water bases hydraulic electric power in several economies in the world, forest resources base several basic necessities such as shelter in Horro Guduru. Therefore, the most important thing is not the rural residence houses as such, but the forest resources underneath these resources. This assertion could perhaps work across other nature dependent economies and life systems in general (Milton 1996; Byers, Robert and Andrew 2001; Kala and Aruna 2010).

The current state of Ethiopia has made several unprecedented attempts to conserve forest resources, which could be envisioned as prototypes of the more autonomous “forestism” to come. But the efforts made so far have more likely been a balloon merely hovering in the air for several reasons. One, the departing site of the balloon (top-down efforts made thus far in forest resources protection and conservation) has ever been deficient for the management of forests has been taking fluxes across the ministry of agriculture and forestry departments over years. Two, the arrival site of the balloon...
(grassroots realities) is also incomplete as it lacks relevant grassroots institutions and clearly identified administrative divisions.

There existed a positive correlation between Oromo cultural ecology and natural forest and tree sustainability. Because of several reasons: (i) practice of native agro-forestry, (ii) respect for ritualised environments, (iii) practice of huussoo agriculture, and (iv) the use of kistaana. The positive correlation is, indeed, pervasive among numerous indigenous peoples of the world: the James Bay Cree hunters of Canada (Townsend 2008), the Yuin of Australia (Townsend 2008), the Shona of Zimbabwe (Byers, Robert and Andrew 2001), the Kayapo Indians of Brazilian Amazon (Posey 2008), and several tribal peoples in Asia (Chandrakanth 1990, Berkes 1999, Sponsel 2001, Milton 2002).

Nowadays, forest resources are alluring the greatest attention in environmental history. Yet more global focus seems to have been slanting towards their role in atmospheric carbon sequestration. Despite their place as essential resources in various nature dependent livelihood systems (like the Horro Guduru case disclosed by this study) wherein momentous query on deforestation and state policy attempts to arrest it lie, this study has empirically ascertained, forest resources have been given petty mind. Consistent with other studies, agricultural activities for short-term gains appear the foremost driver for this tip. The study has explored some new insights also. The major ones are scattered rural settlement pattern as a contributing but a taken for granted cause for deforestation, deficiencies in formal forestism, and the significance of Oromo customs for the sustainability of natural forest/tree resources.

References


Trend Analysis of Crime and Criminality in Addis Ababa over a Decade

By

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Abstract

This study was conducted to explore changes in trends and patterns of crime in Addis Ababa for the period 2000/1-2009/10. Quantitative and qualitative approaches and retrospective research design were employed. Secondary research method and key informant interview were triangulated; quantitative aggregate data was compiled from Addis Ababa Police Commission and qualitative information was collected from 10 police officers through in-depth interview. Purposive sampling technique was used to select the key informants from the Police Departments in Addis Ababa, one from each sub-city. Descriptive statistical and thematic analyses of quantitative and qualitative data were employed. The study found that the total number of crimes as declined over the decade; that crime against the person dominated other categories of crimes until 2003/4 before it was overtaken by crimes against property. The study concluded that: decline in the total number of crimes was attributed more to police reaction though this is not fully conclusive as other factors could equally be behind the decline. So, further study is suggested to fully solve the puzzle. The Vagrancy Control Proclamation resulted in differential treatment of criminals based on their age and employment status.

1. Background

Although society expects its members to abide by and conform to social norms, not all members of society always meet the expectations of conformity. Rather, deviance (of which crime is a form) possibly occurs that necessitates informal or/and formal social control mechanisms. Hence, all societies label certain actions as crimes and punish those who commit them (Finsterbusch, 2004). Accordingly, criminal law violations are subject to physical coercion and punishment (Siegel, 2003).

Certain characteristics of urban society weaken the viability of informal social controls and favor resort to formal social controls (Johnson, 1978). The processes of industrialization, urbanization, faster population growth, heterogeneity, and consequent high rate of unemployment as well as secularization are the major factors that significantly affect the growth of crime in urban areas. As Clinard and Abbott (1973) stated, this is particularly true in developing countries and the towns, and especially the national capitals, bring together people of different tribal and language backgrounds. The inevitability of crime is linked to the differences (heterogeneity) within society (Siegel, 2003).

In less developed countries, sharp increases in crimes against property occur in the cities. Large size of cities correlates with the weakening of informal systems of control and hence higher incidence of crime (Andargatchew, 1992; Clinard and Abbott, 1973).
This study attempted to analyze trends of crimes and criminality in Addis Ababa over 2000/01-2009/10. Being the capital of the country, Addis Ababa is characterized by many of the indicators for the potential occurrence of criminal situations. Addis Ababa is populated by slightly over three million people; is in a process of expansion; and is inhabited by a heterogeneous population. It is also a center of complex social and technological changes; centre for social, commercial, and political interactions, both national and international; and inhabited and visited by foreigners. In addition, it is the destination of choice for rural-urban migrants; and is an entry point to modern views, attitudes, and practices. It is also characterized by having different social problems that could be behind criminal behavior: unemployment, housing shortage, and inadequacy of other social services being the major problems. Therefore, Addis Ababa is potentially prone to many criminal behaviors compared to other parts of the country.

Usually public claims are also heard about different crime incidences; there are developments of new technologies (like internet communication and mobile phones) that facilitate some criminal activities, and serious crime problems are reported to the police and transmitted through the media. Finally, there is a gap of research on trend analysis of crime and criminality in Addis Ababa.

2. Objectives of the Study

The general objective of this study was to analyze trends and patterns of crime in Addis Ababa during 2000/01-2009/10. The specific objectives of the study include:

1. To analyze trends of crimes in Addis Ababa during the last ten years, 2000/01-2009/10;
2. To compare trends of crimes against property and violent crimes in Addis Ababa over the decade;
3. Research Methods and Methodology

3.1 Data Sources

Police data and police officers were the two sources of data for this study. According to Coleman and Moynihan (1996) the data obtained from police statistics is the highest level at which the best and the most reliable information can be secured for analysis of trends. Siegel (2003) also recognizes that criminal statistics is a valid data to measure crime patterns and trends.

3.2 Research Approaches

This research employed both quantitative and qualitative research approaches. Quantitative approach primarily focused on analysis of official statistical data in order to understand the trends of crime was used. As the literature indicates, quantitative research is often useful in uncovering large scale social trends and connections between variables (Bryman, 2004). Accordingly, reanalysis of the existing data, which is one form of secondary research methods, was employed in this study.

Checklist was used to compile the quantitative data from the police commission. Hence, re-analysis of police data was the major research method employed in the study. Descriptive statistics were used to analyze the data to determine rates, prevalence, and incidence of crime situations. Frequencies,
percentages, percentage changes, ratios, rates, tables, charts and graphs were widely employed in analyzing the police data. Employing such quantitative analysis is important because the research involves trend analysis over a given period of time. Although statistical manipulation in general and crime statistics in particular have some limitations, necessary cautions were taken in analyzing data, interpreting findings, and drawing conclusions.

The research also involved qualitative approach to derive meanings from observations and experiences of crime investigators or police officers who participated as key-informants in intensive individual interviews that helped to contextualize the quantitative trends of crime and criminals. That is, qualitative research in this study helped to see aspects of crimes that could not be obtained from criminal statistics. The method was employed to gather first hand information as well as for triangulation purpose in order to complement the re-analysis of the police data. Such a combination of different research methods in a single study makes it possible to move beyond the uncertainties raised by the use of only one research method (Clinard and Abbott, 1973: Yeraswork, 2009).

Interview guide was used to direct the in-depth interview that was conducted with the key-informants. Interview was conducted with ten (10) police officers/crime investigators from the ten (10) Police Departments of Addis Ababa. Purposive sampling technique was used to select the ten (10) crime investigators/police officers for interview. That is, one crime investigator or police officer was included from each sub-city. Crime investigators or police officers were purposively selected based on the perceived knowledge and experiences they have about the information needed.

Thematic analysis of qualitative data was simultaneously done to complement the statistical data. As the aggregate data cannot tell us the detail aspects of crime and conditions of criminals, thematic analysis of the qualitative data was important to reveal when, why, and where the offenses were committed based on responses given by the key-informants for semi-structured questions. Hence, qualitative and quantitative data were simultaneously analyzed in a manner they complement each other.

3.3 Limitations of the Study
Lack of agencies that compile crime data alternative to police statistics like Self Report Surveys and Victimization Surveys had limiting effects on testing the validity of the police statistics by comparing trends obtained from different methods.

4. Operational Definitions of Major Concepts
Crime: refers to a violation of Ethiopian Criminal Law for which the law has prescribed penalty.
Trends of Crime/Criminal: refers to the magnitude and direction of changes in the number of crime incidences and criminals between two points of time or over longer period of time.
Number of offenses: is the total number of crimes/offenses known to and recorded by the police. Hence, the researcher frequently uses this phrase not to repeatedly state the phrase “Known to and recorded by the police”. The term ‘offense’ was also interchangeably used with ‘crime’.
5. Data Presentation and Analysis

In this section, the data were presented and analyzed simultaneously. The section has two sub-sections based on the study’s specific objectives. Trends of the total volumes of crimes and major categories of crimes were examined under the sub-sections.

5.1 Trends and Rate of Total Crimes

5.1.1 Trends of the Total Volume of Crimes

This part compares the total volumes of crimes recorded by the police in Addis Ababa during the given decade to determine the general trends in all offenses. Here, the objective is to see whether the total number of offenses committed in the city has been increasing or decreasing over the past ten years.

Table 1: Total Volumes and Percentage Changes of Offenses, 2000/01-2009/10

<table>
<thead>
<tr>
<th>Number of Offenses per Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Volume Offenses</td>
<td>63767</td>
<td>68588</td>
<td>77736</td>
<td>83863</td>
<td>50662</td>
<td>45971</td>
<td>48889</td>
<td>51421</td>
<td>45933</td>
<td>52017</td>
</tr>
<tr>
<td>% Change in Offenses</td>
<td>-</td>
<td>7.6</td>
<td>13.3</td>
<td>7.9</td>
<td>-39.6</td>
<td>-9.3</td>
<td>6.3</td>
<td>5.2</td>
<td>-10.7</td>
<td>13.2</td>
</tr>
</tbody>
</table>

Source: Adapted from criminal data obtained from Addis Ababa Police Commission (Applicable for all tables unless different sources are indicated)

From table 1, we can see that there are uneven changes in crime trends. It has shown considerable increment up to 2003/04. However, it extraordinarily decreased in 2004/05 by about 40 percent and continued decreasing in the next year but the rate of decline was lower (only about 9 percent). Then, it increased for the next two consecutive years by 6.3 and 5.2 percent respectively before declining by 10.7 percent in 2008/09. Finally, the crime trend has shown significant growth (13.2 percent) in 2009/10. The general trend in crimes over the decade is clearly a significant downward movement.

The volume of crime has decreased when we compare the total number of offenses committed during the first four years with those of the last six years. For example, in 2003/04, a total volume of 83,863 offenses were recorded while it was only 45,933 in 2008/9. The difference between the two was 37,908 offenses that accounts for 45 percent decline. Similarly, the percentage change of total offenses between 2003/04 and 2005/06 was about 41 percent less.

Such significant change in trends in crime, therefore, implies that either the major factors of crime have been solved; or changes occurred in recording methods. Or, it implies that the state has come to
dominate the lives of potential offenders, if no meaningful changes have occurred in the major factors that are potentially behind crime causation.

Therefore, providing possible explanations for such seemingly contradictory trends of crime is quite important. To begin with, such inconsistencies (lack of patterns) might have been induced by different degrees of attentions given to crime detection, prevention and control, and due to variations in the ineffectiveness of the policing activities.

Figure 1: Trends in the Total Number of Crimes, 2000/01-2009/10

Changes and new developments in the legal environment and consequent measures that took place in 2004 seem to result in such radical shift in volumes of crime and far-reaching effects. Amendment of the Ethiopian Criminal Law and the Vagrancy Control Proclamation (particularly the latter) that criminalized and redefined some previously non-criminal behaviors were enacted in 2004.

Vagrancy Control Proclamation was proclaimed in order to permanently dispel the then increasing and wide-spread vagrancy, thereby creating a threat to the tranquility and order of the people (Proclamation No. 384/2004, 2533). Bringing criminals to justice and creating conditions for their social rehabilitation necessitated the proclamation. Accordingly, the objective of the proclamation was to control vagrancy crimes by bringing criminals to justice and imposing punishment proportionate to their crimes and to create conditions for their transformation into law-abiding and productive citizens. Whosoever, any able-bodied, having no visible means of subsistence plus any other conditions like involving in unlawful games, possessing illegal weapons, threatening students in school setting, abusing drug, loitering or prowling, sexually harassing or forcing a woman, participating in organized gang brawls, being a theft-recidivist, etc was defined as vagrant.

The consequent measures had important impact on the volume of crimes recorded since 2003/4. Soon after the proclamation, there was mass conviction of potential offenders in which recidivists were the primary targets. That might be why the volume of crimes recorded in 2003/4 represents the peak during the decade.
According to information obtained through interviews from the key informants, recidivists (or who were considered career criminals) were rehabilitated, organized and finally turned to be productive citizens. Some turned to productive activities and engaged in anti-criminal occupations. A key informant from Arada Sub-City stated this situation as follows.

“Many ex-criminals are currently working. Some of them are organized in micro-enterprises such as cobblestone; some started petty business activities; taxi dispatching at terminals and even some become guards of market places to prevent crime”.

For the interviewee, the extraordinary decline in 2004/05 and more or less stagnant trends afterward were fairly attributed to such interventions. Though the intervention could have certain minimizing effects at least temporarily, whether such interventions alone could have reduced crime occurrences to this extent needs detail investigation to fully understand the causal factor. Hence, generalizing this factor to the actual crime incidences in Addis Ababa is difficult simply because of the unknown incidences due to the dark figure.

5.1.2 Trends in Total Crime Rate

Here, trends of crime rate were determined based on the total number of crimes committed per year and the total population of Addis Ababa during the decade. The rate was calculated per 100,000 people of the total population size of the city which was projected from 1994 Population and Housing Census of Ethiopia. As table 2 shows, crime rate decreased over the last ten years. It showed continuous increment until 2003/04 from 2481 in 2000/01 to 2990 in 2003/04 which rose up by about 21 percent. Then, it alternatively went up and down in the second half of the decade within one or two year. The change in crime rate more or less coincided with that of the total number of offences. Over the decade, the crime rate decreased from 2481 in 2000/01 to 1776 in 2009/10 with a change of 28 percent downward trend.

Table 2: Number of Offences, Population Size, and Crime Rate, 2000/01-2009/10

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<tbody>
<tr>
<td>63767</td>
<td>68588</td>
<td>77736</td>
<td>83863</td>
<td>50662</td>
<td>45971</td>
<td>48889</td>
<td>51421</td>
<td>45933</td>
<td>52017</td>
<td></td>
</tr>
<tr>
<td>Total Population per Year (projection)</td>
<td>2570004</td>
<td>2646000</td>
<td>2725002</td>
<td>2805000</td>
<td>2886996</td>
<td>2973004</td>
<td>2739551</td>
<td>2804733</td>
<td>2865872</td>
<td>2928345</td>
</tr>
<tr>
<td>Crime Rate per Year</td>
<td>2481</td>
<td>2592</td>
<td>2853</td>
<td>2990</td>
<td>1755</td>
<td>1546</td>
<td>1785</td>
<td>1833</td>
<td>1603</td>
<td>1776</td>
</tr>
</tbody>
</table>
Source of Population Size: CSA
Therefore, the decline might be attributed to non-demographic factors which were explained earlier. Population size of the city has been increased over the decade to some extent whereas crime rate increased until 2003/04 and then generally declined. Population size showed lesser increment (14 percent) compared to 28 percent decline in crime rate between 2000/01-2009/10. From this it is understandable that increase in population size could not be an important factor for the decline of crime rate and the total number of crime during the decade.

![Figure 2: Trends in Crime Rate, 2000/01-2009/10](image)

5.2 Volume, Proportions and Trends of Major Types of Crimes

The 46 crime items used by the police commission were grouped into three major types of crimes. Such regrouping allows presenting a concise picture, and clear and easy comprehension. The three typologies of crime include crimes against the person, crimes against property, and “other crimes”. But analysis of this study mainly focuses on comparing crimes against the person and crimes against property. The “other crimes” consists crimes from different categories such as crimes against public order and morality, and crimes against municipal and/or state regulations.

Table 3 shows that crimes against the person and crimes against property have constituted majority of the total crimes committed in Addis Ababa over ten-year period. Together, they have contributed 67-70 percent of all crimes from 2000/01-2009/10. “Other crimes” have constituted about 30-32 percent of all crimes throughout the given period.

However, contribution of crimes against the person and crimes against property has shown significant changes over the last ten years. Generally, the share of crimes against property has continued increasing whereas that of crimes against the person has declined. “Other crimes” have contributed more or less stable proportion of all crimes with a relatively larger share in the first three years. Since 2003/04 “other crimes” have been constantly contributing about 30 percent of all crimes.

Shift in trend has also been taking place with regard to the contributions of crimes against the person and crimes against property particularly since 2004/05. From 2000/01-2003/04 crimes against the person had dominated over crimes against property. For instance, in 2001/02 crimes against the person and crimes against property had contributed 42 percent and 25 percent respectively. However,
the dominance has been totally shifted to crimes against property in 2004/05 and has continued so until 2009/10. In 2009/10, crimes against the person and crimes against property shared 27 percent and 42 percent respectively. Being components of the total crimes described earlier, trends of major categories of crimes are logically expected to follow similar trend with that of the total volume of crimes. Generally, the three major categories have increased until 2003/4 before they sharply dropped in 2004/5. Then, they continued unstably moving up and down until 2007/8. Finally, they tended to rise up after 2008/9. However, the degree of change in trends in each category of crimes varies over the last ten years. Such variations better understood from the following line chart.

Table 3: Frequencies and Percentages (in parenthesis) Distributions of Reported Criminal Offenses by Major Types of Crimes, 2000/01-2009/10

<table>
<thead>
<tr>
<th>Types of Crime</th>
<th>Number and percentage (in parenthesis) Distributions of offenses per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2001</td>
</tr>
<tr>
<td>Against Property</td>
<td>18413 (28.9)</td>
</tr>
<tr>
<td>Against Person</td>
<td>24924 (39.1)</td>
</tr>
<tr>
<td>Other Crimes</td>
<td>20430 (32.0)</td>
</tr>
<tr>
<td>Total Offenses</td>
<td>63767</td>
</tr>
</tbody>
</table>

In the first three years, number of crimes against the person had been sharply increasing and dominated crimes against property. “Other crimes” had been the second dominant for that period. Crimes against property had declined in 2001/02 before it started to increase in 2002/03. As the trend in crimes against the person and “other crimes” remained constant, crimes against property continued to rise up in 2004/05 and assumed the second dominant crime category next to crimes against the person. That year became the turning point for all crime categories as it was a point where the sharpest fall in the total number of crime was observed during the decade.

Since the trend in crime against the person was falling at sharper rate than crime against property, contribution of the former category dropped below that of the latter. While crime against property has slightly increased, the other two categories continued to fall in 2005/06. As crime against the person was declining faster than “other crimes”, its contribution to the total crime has become the lowest (below that of “other crimes”). After this particular year, the order of dominance has been completely changed as crimes against property has become on the top followed by “other crimes”; crimes against
the person has remained below ‘other crimes’. Between 2005/06 and 2009/10, all crime categories moved in similar directions and with more or less similar changes in magnitude. From 2005/06 to 2007/08 and 2008/09 to 2009/10 all have shown small increment but slightly declined between 2007/08 and 2008/09.

Possible explanations have been suggested for the changes discussed above. Scholars in criminology argue that the nature and extent of crime are influenced by mode of livelihood and areas of living. Accordingly, in rural areas where agricultural economic activities are the primary livelihood, crime incidents tend to be dominated by crimes against the person. On the other hand, in relatively more urbanized and industrialized areas, crimes against property dominate over crimes against the person. Scholars in the field have also found the dominance of crimes against property over crimes against the person in cities of developing countries (Andargatchew, 1988; Clinard and Abott, 1973).

![Figure 3: Trends in Crime by Major Types of Crimes, 2000/01-2009/10](image)

In other words, as rate of urbanization increases and industries emerge, crimes against property become more and more dominant over crimes against the person. As far as the crime situation in Ethiopia is concerned, Andargatchew (1988) found that during the Imperial Regime, crimes against the person had dominated over crimes against property which later started to reverse. In Ethiopia, communal landownership systems based on kinship ties had been important factors for group-based violent crimes in rural areas. Being a city of developing country, crime situations in Addis Ababa could be better explained in lines of these findings and theoretical orientations.

Addis Ababa is a business centre; particularly it serves as the primary national and international center for economic exchange including import and export activities. Compared to other parts of the country, both rural and urban areas, Addis Ababa has huge accumulation of physical and capital resources that are targets of crime. Hence, there are abundant properties for targets of criminal activities such as robbery, theft/larceny, and burglary to mention only a few of them. Vehicles, electronic materials such as laptops, cellular phones, money, jewelries, large stores, factories, financial institutions, and many other properties are concentrated in Addis Ababa. As the key informants described, some of these properties are not only the target of crimes but also serve as tools of criminal activities. For example, offenders in Addis Ababa are reported to use mobile phones and vehicles for burglary and robbery purposes.
The relative abundance of resources in recent years that are targets for theft/larceny, robbery, and burglary might have contributed for shifting attentions of criminals from crimes against the person to crimes against property. Increase in theft of automobile and its spare parts, theft of electronic materials, and robbery of expensive articles such as jewelries as well as fraud and embezzlement can partly be explained in relation to urbanization processes that create suitable conditions for property related crimes. A key informant from Bole Sub-city stated how cheque fraud crime was committed in Addis Ababa as follows.

Cheque fraud has become a modern type of crime because cheque is easily accessible to own with very small capital (even as less as 3000 Birr). And people have wrong conception about possessing cheque as it is believed that someone who has cheque must be rich, responsible and accountable for all his actions. For instance, somebody deceived many people by moving in different sub-cities. He bought cheque with capital of 5500 Birr. Then, he collected millions of Birr deceiving many people. He rented an office on a known building as if he deports people to America. He had his own guard and established networks that support his activities. He received 50,000-60,000 Birr as prepayment for the ‘service’ he provides. Finally, wrongly proclaim the operation was unsuccessful, he gave them cheque to recollect their money from bank and escaped; but it was proved that he did not have that much money in his account.

The informant also described the suitability of Bole Sub-City for property related and other crimes as follows:

Bole Sub-City hosts the largest super markets, the largest buildings, dancing and other recreational places, residence of many higher officials and wealthy people. Therefore, it attracts more property related crimes than others. The offenders can get more with little efforts. Entering into a wealthy persons’ compound, a thief can pick at least children’s toy or parts of vehicle which are very expensive. Existence of twenty four hours open recreational places, being residence for new comers and foreigners, and construction of real estates in Bole expansion area opened rooms for committing easily unnoticeable crimes.

However, one should also be careful not to overlook the likelihood of unemployment to be a possible explanatory factor for the dominance of crimes against property in Addis Ababa. In spite of the job creation attempts mentioned earlier, it seems that unemployment can be one of the possible factors for the dominance of crimes against property. Almost all key informants revealed that unemployed people highly involve in criminal activities than the employed ones.

Therefore, two arguable conclusions could be drawn regarding the types of and trends of crimes against property in Addis Ababa. First, abundance of target resources might have attracted potential offenders; second, unemployment could still be playing a motivating role as a means of securing basic needs of unemployed people. However, the latter argument should not be taken as a conclusive argument that suggests all or most of unemployed people turn to engage in property related criminal activities to meet their basic necessities.
The abundance of properties that are targets of crime can also be explained in relation to some other possible factors for the dominance of crimes against property. First, economic growth that have been particularly achieved in the second half of the decade might have resulted in increasing inequalities between the rich who are getting richer and the poor who are getting poorer or remain poor. Such imbalance benefits from economic growth could have resulted in relative poverty in which the poor and the rich live side by side. In such situation, the poor who are in need of resources easily access target properties owned by the nearby rich people.

Bole and Addis Ketema Sub-Cities are ranked on top for high incidences of crimes against property. Because, compared to other sub-cities, these two sub-cities are mainly characterized by suitability for property crimes. Addis Ketema Sub-City hosts the largest market (Mercato) in the country where merchants from almost all corners of the country come to transact money and commodities. Moreover, the country’s main bus station which serves as core of transition is also located in Addis Ketema Sub-City. People from different parts of the country pass through this station to reach other parts in the country. While passing through this center, their exposure to be victims increases.

According to the head of crime investigation in Addis Ketema Sub-City Police Department, vehicle theft, car clouting (theft goods from vehicle), car stripping (theft of vehicle parts), snatching, pick pocketing, robbery and ‘shiblela’ are common crimes against property in Addis Ketema Sub-City. Shibela is performed by a group of people in which even some shop owners take part. Offenders know where and how to escape, and have members to whom they transfer the stolen goods. Most of such stolen goods are resold with low prices to 'legally licensed' merchants. In Addis Ababa, crimes against property have identifiable patterns in terms of operation time, location, nature of victims and offenders. As indicated above, offenders operate in group and have place to sell as well as to hide the stolen materials and themselves from apprehension by the police.

Pick pocketing and snatching are more commonly committed on particular people than others. The patterns of victimization are related to whether the victim is from rural or urban areas. For example, in the Mercato area particularly in and around bus stations people from rural areas are usually the easy targets of pick pocketing. Similarly, women are more targeted for snatching of bags and mobile phones. Vehicle theft and burglary are mostly committed at night when owners go to sleep. In particular, vehicle theft and burglary are commonly committed during rainy seasons to eliminate evidences and to minimize the possibility of being caught. Thefts of vehicle parts are also seasonally patterned based on when the stolen parts are highly required. For example, side mirror, wiper, etc are the easy targets during the rainy seasons.

6. Conclusion

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258 Shiblela refers to criminal acts in which so called porters in the Mercato areas run away from the owner of the goods. It is theft that amount to snatching.
In this study, attempt was made to measure changes in the trends, types and patterns of crime over a decade, 2000/01–2009/10, in Addis Ababa. Here, conclusions of the study are presented; some of the conclusions are tentative that warrant further investigation.

Decline in the volume of incidence after 2003/04 was less likely to be the result of the legal changes occurred in 2004. This is because the amendment of the Ethiopian Criminal Law and the Vagrancy Control Proclamation were expected to increase the number of reported crimes as they redefined some previously legal activities to be criminal behavior. It seems that the Vagrancy Control Proclamation was proclaimed to control the political unrest that was prevailing during the first half of the decade than to avert the crime problem it claimed. As a result, the mass conviction of those who participated in political demonstration of 2004/05 was not recorded by the police. Decline in non-violent crimes can be related with the state dominance over lives of the people in relation to the National Election Campaign. Fear of being labeled with political upraising might have frightened some potential criminals. Therefore, recording bias and state dominance are best associated with the decline of number of crime in 2004/05.

The radical decline in the total number of crime between 2003/04 and 2004/05 is unusual for a city of a developing country’s city such as Addis Ababa. Research on crimes in cities of developing countries has shown as the rate of urbanization increases, incidences of crimes also increase (Andargatchew, 1992: Clinard and Abbot, 1973). Therefore, the radical change in the volume of crime that has being recorded after 2003/04 is a puzzle and it needs further study to determine causal factors for such decline.

Inconsistencies of trends in crimes after 2004/05 are more attributed to fluctuations in effectiveness of policing activities and/or lack of uniformity in crime recording than changes in actual crime levels. That is, police’s reactions to people’s behavior have affected the size of crimes than the actual changes in people’s behavior in such short period of times. By improving the techniques of crime recording and by maintaining uniformity of recording, the police can minimize such inconsistencies.

The Vagrancy Control Proclamation focuses on a particular social group and behavior of its members. As a result, it defines or labels the able-bodied people (most likely the youth) and unemployed people who loiter as “criminals”. It seems that the proclamation shifted the attention of justice agencies (particularly the police) to some extent away from criminal behaviors of other social categories such as employed people, professionals, businessmen, government officials, and so on mainly because of its very definition of young unemployed people as vagrants.

References


The Psychology of Learning and Assessment: a review

By

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Department of psychology, Jimma University

Abstract

Theoretical perspectives to learning and assessment exert considerable influence on the activities of practitioners in the field of education. This review article discusses about three major theoretical perspectives than inform human learning and assessment. The article emphasizes on the importance to recognize the implication and influence of the theoretical perspectives on practitioners’ activities in facilitating student learning and assessment. The theoretical perspectives discussed in this article are namely the behaviorist perspective, cognitive-constructivist perspective, and the social-constructivist perspective. Each of these perspectives has a philosophical origin either from Aristotle’s empiricism or plato’s rationalism of knowledge formation. The behaviorist perspective of learning and assessment assumes the strength of the bond between a stimulus and response of the student as a mark for effective learning. The assessment practice in this case regards the probability of correct responses compatible to the learned stimulus. On the other hand, the cognitive-constructivist perspective assumes the mind to be active and powerful in changing the knowledge structure of an individual through the process of assimilation and accommodation. Hence, the assessment practice in the cognitive-constructivist perspective focuses on the transfer of knowledge from the context it was learnt to a new context for application rather than on the probability of correct responses to a stimulus. In the social-constructivist perspective the conception of learning incorporates more ideas about culture, social learning, and cooperation. According to this perspective, learning is a collaborative action with multiple perspectives. That means learners participate in establishing goals of learning.
peer assessment, and group assessment. Therefore, this review article intends to give answer for question “How are learning and assessment perceived from the different theoretical perspectives?”

**Introduction**

Educators define learning as behavior change or capacity for behaving “in a given fashion, which results from practice or other forms of experience” (Ertmer & Newby, 1993:53). The available literature presents different conceptualisations of learning. These differing conceptions dictate the discussions and activities of learning and assessment. Moreover, the conceptualisation of learning influences educator’s view of assessment practices (Careless, 2008). As Yorke (2003) state it, learning and assessment are logically intertwined. There is also an increased recognition of the interactions between classroom learning and assessment (Peter, 2007:18). Because of this, one can possibly argue about the inseparable nature of learning and assessment.

Early views on the philosophy of knowledge and learning had significantly influenced current conceptions of learning and assessment (Hulse, Egeth, & Deese, 1980). Aristotle’s association’s view place emphasis to basic sensations as sources of knowledge and learning. According to this view organisms are born with no knowledge (mind as *tabula rasa*). Learning occurs by taking the basic sensations and connecting them mechanically to make sure that they are hooked together contiguously in time or in space. This philosophical view of learning became an origin for stimulus- response or behaviourist learning theories of J.B Watson, L. Thorndike, and B.F Skinner. In contrast, Plato’s rationalist view (nativism) postulated that all knowledge was unlearned and an inherent part of the organism at birth. Learning is an illusion, a simple failure to remember what was already in mind. This nativist position holds that much of the capacity for learning is innate or it is part of the genetic makeup of a species and is relatively independent of any particular experience that may occur after birth. However, modern thinkers of this line do not go as far as Plato. They do maintain that in many situations organisms are born with an innate tendency to structure, perceive, or react to the various events that occur after birth in a rather predetermined fixed way. Chomsky’s analysis of the acquisition of language (LAD) can be a good example for this. According to Chomsky (1968), the predisposition to talk and learn a language, and to do so according to a certain particular grammatical rules, is an inborn characteristic of the human species.

The twentieth century was marked by contributions of different thinkers to explain about human learning. In the early 20th century, learning was believed to result from behavioural responses. For instance, E.L. Thorndike at Colombia University was a popular figure with regard to his contribution to understanding human learning (Shrock, 1991). According to Thorndike, learning should pursue pre-specified, socially useful goals. Moreover, he was a strong advocate of educational assessment (Shrock, 1991). The 1920s were known for the objective movement in education. For example, Franklin Babbitt introduced the idea of educational objectives and individualised instruction. He suggested that, schools should provide experiences specifically related to those activities demanded from citizens by their society (Shrock, 1991). Furthermore, Babbitt thought educators could derive the goals for schooling from an objective analysis of the skills necessary for successful living. This
learning goal specification together with the practice of assessment led to the concept of mastery learning (Ertmer & Newby, 1993). In the 1930s, Ralph W. Tylor introduced the specification of objectives in terms of student behaviour; therefore, the objectives and their assessment help to revise and refine the new curriculum until it produces an appropriate level of achievement (Shrock, 1991). Though the phrase would “not be coined for almost thirty-five years” until the time of Michael Scriven (Shrock, 1991), instructional developers recognised this practice as formative assessment.

The notions of programmed instruction and task analysis became known in the 1950s through the contribution of B.F. Skinner. Skinner suggested that human learning could improve with the application of reinforcement to desired learning behaviours. Hence, according to Shrock, (1991: 14) “clearly stated behavioural objectives, small frames of instruction, self-pacing, and active learner” responses to questions and immediate feedback regarding the correctness of responses characterize programmed instruction; In terms of this view, learning is a change in behavioural disposition that educators shape behaviour by selective reinforcement (Jonassen, 1991).

According to Jonassen (1991), the conception of learning has undergone a major revolution since the 1950s. Theories and models of learning from cognitive psychology are becoming common in explaining the learning process (Gardner, 1985). As Jonassen (1991:6) states, cognitive psychology assumes “learning is concerned not so much with behavioural responses, but rather with what learners know and how they come to acquire it.” Because of this competent view of human learning and the introduction of the constructivist paradigm, conceptions of human learning and assessment have shown changes.

Based on the points raised above, conceptualisations of human learning and their implications for assessment are becoming more complex. Therefore, it is important to recognise and discuss the implications of the main learning theories and their influence on the activities of student learning and assessment. The following discussion presents three theoretical perspectives of learning and assessment. The psychology literature on the theories of learning labels these perspectives as the “behaviourist,” “cognitive-constructivist” and the “socio-cultural” perspectives respectively.

**Behaviourist perspective of learning and assessment**

Behavioural conceptions of learning emerged in the early decades of the twentieth century and were dominant until the 1970s. Behavioural views consider learning as a systematic association of events called stimuli and responses. Within this conception, the “observed behaviours of the learner” as well as the determination of behavioural objectives before the instruction are the foci (Reiser, 1987). There is a tendency to match the objectives and their assessment until the learner attains the appropriate level of achievement (Shrock, 1991). Psychologists and educators used to call this “mastery learning.”

Within this perspective, the dominant mode of teaching follows the transmission approach. The students’ involvement rarely becomes active, both with regard to the learning and assessment activities. In effect, the role of the lecturer is to present the contents of the course and construct assessment tasks that require students to respond to questions based on the presented contents. Jonassen (1991) and Ertmer & Newby (1993) equate such learning with behavioural outcomes, which
tend to place little emphasis on the role of mental operations or cognition. Jonassen (1991) regards this conception of learning as “objective.” This conception does not consider the experience and individuality of the learner very well. An objectivist conception of learning assumes that lecturers or technologies transmit the knowledge to be acquired by learners (Jonassen, 1999:217). Learning occurs when the learner demonstrates the proper responses following the presentation of a specific environmental stimulus or learning content (Ertmer & Newby, 1993:55). In this perspective, the key elements in learning and assessment process are the stimulus, the response, and the association between the two.

The association between the stimulus and the response can be strengthened using instructional cues, practice and reinforcement. However, as Schunk (1991) puts it, the learning of higher-level cognitions such as language development, problem solving, and inference generating and critical thinking is not clarified by the behavioural view of learning. This view of learning considers assessment as an action of the learner in exercising proper responses to learned stimuli (Ertmer & Newby, 1993). Because of this, students may lack the opportunity to develop alternative conceptions of knowledge.

The focus of assessment procedures in terms of the behaviourist view of learning is to examine the observable behaviour of the learner as an evidence for the realisation of intended learning objectives. The assessment tasks tend to check for facts known and recognition of events, rather than the learner’s conceptual change and development. As described by Gipps (1994) and Biggs (1998), in terms of the behaviourist view of learning and practice, assessment tasks seem to function as instruments for checking whether the learner has received, absorbed, and memorised the presented content during instruction. The scoring of exams emphasises the correctness and incorrectness of student responses to questions. Feedback to learners is often limited to show an incorrect answer or the correct answer with little guidance on how to progress in improving (Peter, 2007).

Cognitive and constructivist perspective of learning and assessment

The behaviourist conception of learning discussed in the above section, rarely considers the mind or human cognition in the process of learning. Learning is, by large a behavioural disposition of an individual that can possibly become shaped by selective reinforcement. This little consideration to human cognition in the learning process was the primary theoretical cause for the paradigm movement in the learning psychology (Jonassen, 1991:6). In the mid of 20th century, the Swiss psychologist J. Piaget came up with a theory of human cognitive development. Piaget proposed human cognitive development into four qualitative different stages such as sensory-motor, preoperational, concrete operations, and formal thinking (Shrock, 1991). According to Ertmer and Newby (1993:58), cognitive views of learning have emphasised “what learners know and how they acquire knowledge” rather than probabilistic observable responses. Regarding the shifting conception of learning from behavioural responses to cognitive processes, Ertmer and Newby (1993:57) point the following:

In the late 1950s, learning theory began to make a shift away from the use of behavioural models to an approach that relied on learning theories and models of the cognitive sciences. Psychologists and
educators began to de-emphasize a concern with overt, observable behaviour and stressed instead more complex cognitive processes such as thinking, problem solving, language, concept formation, and information processing.

The cognitive views of learning consider the learner as one who actively interacts with the environment to acquire knowledge, skill and competencies. However, this view of learning has limitations due to the inconsistent assertions to the meaning of the mind. In fact, whether the mind is a material entity controlling the actions of the knower, or something spiritual was controversial (Jonassen, 1991). Cognitive psychologists such as Jean Piaget considered the mind or mental constructions as representations of the real world that the learner assimilates or accommodates information (Bruner, 1986). As stated by Ertmer and Newby (1993), cognitive views consider learning as discrete changes between states of knowledge rather than with changes in the probability of responses.

For cognitive psychologists, learning occurs when the memory stores information in an organised and meaningful manner. As a result, the assessment for learning relies more on checking the learner's ability to retrieve information and use in a new context (Ertmer & Newby, 1993). Moreover, the roles of corrective feedback and practice are highly emphasised.

On the other hand, contemporary cognitive theorists challenge the above conception because of its emphasis on objective reality that is represented in the learner’s cognition (Jonassen, 1991). These theorists suggest an individually constructed version of reality. This conception led to the viewing of learning through the lens of constructivism. As proposed by Murphy (1997:4):

...whether we see knowledge as absolute, separate from the knower, and corresponding to a knowable, external reality or whether we see it as part of the knower and relative to the individual experiences with the environment, have far-reaching implications for learning and assessment.

According to Jonassen (1991:10), the constructivist conception to learning claims that “reality... dwell[s] more in the mind of the knower, that the knower constructs a reality, or at least interprets it based on his/her perceptions.” This is based on Piaget’s proposition of knowledge construction through the process of assimilation and accommodation. Jonassen (1991:11) indicates that constructivist learning paradigm “has the most direct implications for changes in teaching and assessment.” As Sheppard (2000:16) states, in this paradigm of learning, “knowledge is neither passively received nor mechanically reinforced; instead, it occurs by an active process of sense making.”

Constructivists believe that learning occurs when learners encounter new experiences and concepts and seek to assimilate these into their existing cognitive structures or adjust these schemas to accommodate the new information (Ray, 2001:319). Within constructivists’ view, learning occurs, not by recording information but by interpreting it (Resnick, 1987).

In the words of Evan and Trios (2002), constructivism assumes the creation of knowledge through an active process of construction, rather than passive assimilation of information or rote memorisation.
Therefore, it considers knowledge as conceptual structures, which the learner adapts to the range of his/her experiences rather than a representation of an independently existing real world (Anthony & Walshow, 2003). With respect to this point, Colliver (2011:50) asserts the following:

"... Constructivism shifts the view of knowledge from historical, eternal truths—which would seem to focus curricula on current knowledge, the truth, and the real-to-historical, cultural inventions—that are changing and evolving, making the meaning of current knowledge more dependent on where we have been.

Thus, constructivism recognises learning as a process of conceptual growth and growth in general cognitive abilities, such as problem solving tactics and metacognitive processes (Peter, 2007). Though educators have increasingly accepted constructivism, translating it into practical instructional tactics has proven to be difficult for teachers (Ray, 2011:319). Jonassen (1991) assert that constructivism failed to establish the implications well enough to support a prescriptive theory of learning. In fact, it has challenged the existing, teaching and assessment activities.

Theoretically, the teacher’s role is limited to guide and coach students to move from being novice learners to being expert learners. In the process of learning, the teacher may need to prepare learners to regulate their own learning by providing supportive rather than directive learning environments (Jonassen, 1991:13). The assessment tasks should involve self-reflections by learners, self-assessment, peer assessment, self-regulation skills and useful feedback from the experienced coach, who is the teacher. Besides evaluating the learners’ current level of knowledge and understanding, educators could design assessments to scaffold future learning (Peter, 2007). According to Wilson, Teslow, and Jouchoux (1995: 153-154), in constructivist learning environments, “student assessment incorporates assessment into the teaching product, analyses and discuss products grounded in authentic contexts, evaluates processes as well as products, and utilise informal assessments within classrooms and learning environments.”

Socio-cultural perspective of learning and assessment

Although Piagetian versions of constructivism emphasised individual developmental stages or processes earlier, over time, cognitive psychologists have come to take the influence of social processes more seriously (Sheppard, 2000:19). A constructivist conception of learning tends to accommodate multiple perspectives (Wilson, Teslow & Osman, 1995), because it is a broad theoretical framework rather than a specific model of design. Jonassen (1991) argues about the difficulty of conceptualising constructivism.

The early conception of constructivism, which has its origin in Piaget’s idea of assimilation and accommodation, emphasizes thinking at an individual level (Wilsow, Teslow & Osman, 1995). At the other extreme is the socio-cultural conception of constructivism that incorporates more ideas about culture, social learning, and cooperation (peer learning). As Sheppard (2005:18) asserts, cooperative “learning contributes to students’ active engagement and helps to develop valuable peer and self-assessment skills.” Based on the explanation of Merill (1991:49), ideas such as “experience as source
of knowledge, learning as an active and personal interpretation of the world, learning as collaborative and situated in real contexts, and integration of assessment tasks.” characterise constructivism.

Moreover, Wilson, Teslow, and Osman (1995:141) add other points to characterise the socio-cultural constructivist conception of learning. These are “reflection as a key component of learning to become an expert, like instruction, assessment should be based on multiple perspectives, and learners should participate in establishing goals, tasks, and methods of instruction and assessment.”

These latter points are parallel to the assumptions of formative assessment mentioned by Sadler (1998). However, we have to note that the socio-cultural conception of learning and assessment accommodates multiple perspectives. For instance, regarding the multiple conceptions of socio-cultural learning, Wilson, Teslow, and Osman (1995:147) stated the following:

....not all students share the same learning goals; not all students’ learning goals converge completely with instructional goals; students have different styles of learning, different background knowledge. Rather than ignore these differences, instruction should acknowledge the evolving nature of knowledge and encourage students to engage in a continuing search for improved understanding. This plurality of content, strategies, and perspectives typifies postmodern approaches to instruction.

Socio-cultural conception of learning and assessment considers human cognition as intrinsically social and situated. According to socio-cultural theory, students develop cognitive abilities through social interactions that lead them to try out language and practice their reasoning (Sheppard, 2005). The main interests in this conception are the kinds of social engagements that facilitate the proper context for learning to take place (Evan & Tirosh, 2002:232). In contrast to the de-contextualisation and decomposition of knowledge fostered by behaviourism, it is difficult to understand any aspect of knowledge separately from the whole or separated from its social and cultural context (Sheppard, 2000:19-20). Educators generally regard peer assessment and formative feedback as social engagements, which may contribute to the improvement of student learning as a group and individually. As Sheppard puts it, socio-cultural theory holds together an understanding of how student:

...learn and at the same time how they develop identities as capable learners. When implemented by experienced teachers, formative assessment practices further cognitive goals and at the same time draw students into participation in learning for its own sake.

According to Anthony and Walshow (2003), a socio-cultural conception of learning and assessment are actually views of social practice. The socio-cultural theorist Lave (1998) sees the learner as a member of the “community of practice.” As a result, the learner is both shaping and being shaped by the community of practice. According to this conception, learning is a social and collaborative activity in which learners develop their thinking together (James, 2005:57).

When it comes to assessment, the assessment activities within this conception are embedded in the learning (Peter, 2007). This means that assessment is a dynamic process that provides both
prospective measures of performance including competencies that are developing, and is predictive of how the student might perform independently in the future (Palinscar, 1998).

The socio-cultural tradition of Vygotsky and the socio-cultural school holds that the origins of consciousness are socially situated. This means that the learner is who he or she is through participating in the community around him/her (Pryor & Crossourd, 2005). Learning and identity are therefore not separate, because learning involves the construction of identity (Lave & Wenger, 1991). However, identities are multiple, performed and continuously reconstructed through engagement in the community of practice (Pryor & Crossroad, 2005). This view of learning proposes embedding assessment activities within the learning, which itself is embedded in the socio-cultural activities of the classroom. Actually, formative assessment is a central feature to the understanding of assessment within socio-cultural learning view.

In this view of learning and assessment, involvement in collaborative activities, social interaction and discourse are fundamental to the development of metacognitive processes, which in turn, are critical to student engagement in terms of practices of formative assessment (Wood, 1998). According to Wood, when students participate in collaborative activities and interaction, they will be more confident to think about their understanding, planning, organising and assessing of their learning both collectively and individually. Gipps (1999:377) also described assessment in a social situation as it can be practised by assessing students in collaborative group activities in which they contribute to a task and help others. In terms of this assessment, “the instruction using group approaches, the student can observe how others reason and can receive feedback on his or her own efforts. According to Gipps (1999:377), “the advantage of such a socially situated assessment is that it encourages learners to develop and question their definitions of competence.” In addition, Gipps asserts that such a conception of assessment encourages lecturers to reconstruct their relationship by sharing the responsibility of learning and assessment and by involving the learner more as a partner in the classroom.

The idea of looking into formative assessment as socially situated leads to understanding assessment as a process that considers teacher-student and student-student dynamics (Ross, Ralhiester, & Gray, 2002). In Rogoff’s (1990:28) words, effective learning and development of competencies normally occur by experts (teachers, outstanding peers) and novices (learners) having the chance “to converse as they work together on a common goal or product.” Because of this, the teacher participates in the learning so that the relationships between the teacher and students are developed in a less hierarchical way (Peter, 2007). Therefore, assessment information is commonly used between student and teacher and among peers, to help learners in the regulation of learning (Torrance & Pryor, 1998). Hence, formative assessment that involves teacher feedback together with peer and self-assessment can be a central social process that mediates the development of cognitive abilities, construction of knowledge and students’ identities (Sheppard, 2000: 4).

On the other hand, Vygotsky’s proposition of the zone of proximal development (ZPD) gives a clear insight with regard to locating and conceptualising assessment in the socio-cultural view of learning.
and assessment (Gipps, 1999:375). The notion of ZPD focuses on the existing gap between what the learner can achieve without the help and what he/she can achieve with proper help from a tutor or experienced peer. The ZPD approach emphasises the teacher’s role regarding setting learning goals that are achievable by the learner with appropriate help and provision of such help through formative feedback practices (Black, 2001). This may facilitate the implementation of effective formative feedback that leads students into the ZPD and encourages them to engage actively with the feedback rather than supplying students with predetermined solution paths (Peter, 2007).

In summary, the socio-cultural view of learning and assessment has clear implications for understanding opportunities of improvement in student learning. The view promotes the increased use of alternative assessment practices that take account of the social and cultural context in which learning occurs (Peter, 2007). Researchers in educational assessment (for example, Bourke, 2000; Ruthven, 2002; Dylan et.al., 2004), list several alternatives of formative assessment such as formative feedback, self-assessment, peer assessment, observations, portfolios, practical assessment, investigations and small group projects as valid techniques of gathering information about student learning achievement and improvement. In fact, practical implementation challenges of these alternative types of assessment are well recognised (Watson, 2006).

Summary

Instructions and assessment procedures designed based on the theoretical perspectives could help students gain different competencies. The theoretical perspectives can inform the learning and assessment process based on the nature of what is learned and the level of learners involved. Complexity of the learning task and assessment demands may determine on which of the perspectives to rely. For instance, one cannot teach and assess facts the same way that concepts or problem solving are taught and assessed. Similarly, the proficiency level of the learners involved will influence the theoretical perspective to rely on. As learners acquire more experience with a given content, they progress along a low-to-high knowledge continuum from recognizing facts and rules (knowing what), to thinking and extrapolating facts and rules to problematic cases (knowing how), to developing and testing new forms of understanding and acquisitions when familiar ways of thinking fail (reflection-in-action). Depending where the learner is in terms of level of knowledge (knowing what vs knowing how vs reflection-in-action), the most appropriate instructional approach can be derived from the respective theoretical perspectives. That is, a behavioural approach can effectively facilitate mastery of content (knowing what), cognitive approaches can be used to teach problem solving skills where defined facts and rules are applied in unfamiliar situation (knowing how), and social constructivist approaches suit to deal with ill-defined learning problems through reflection-in-action.

On the other hand the cognitive processing requirement of the task to be learned may determine the theoretical perspective that informs the instructional approach to be followed. For instance, for a learning task that requires a low degree of cognitive processing (e.g. definitions, facts, discriminations, paired associations, rote memorization, stimulus-response, contiguity of feedback/reinforcement) seem to be approached by the behavioural perspective. Learning tasks, which
Require an increased level of processing (e.g. advanced concepts, classification, rule or procedural executions) are associated with strong cognitive emphasis (e.g. schematic organization, reasoning, problem solving). Learning tasks requiring high levels of processing are best approached by constructivist perspective (e.g. situated learning, cognitive apprenticeship, social negotiation).

Thus, as a professional practice, education has to rely on the theoretical perspectives, which inform learning and assessment. Each of the perspectives discussed have contributions to guide student learning and assessment. For instance, the behaviourist model fits to the teaching at lower grades and new courses at higher levels. Cognitive-constructivist and socio-cultural models fit to teaching at higher levels of education, advanced courses, and in adult education.

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The Origin of Coffee: Analysis of Oral Traditions and Literatures

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Abstract
Since the past ten or eleven years several researches have been conducted on coffee emphasizing on its bio-diversity, genetic, quality, disease, role in ecosystem and its economics (production, distribution, consumption). However, its exact origin has not yet received genuine historical study. This study intends to find out some clear understanding on the origin of coffee on one hand, and to make critical evaluation of sources, particularly those localized and armchair reports which lack external validity or standard historical credibility on the other. Both primary and secondary sources of data were used. Secondary sources involve general literatures with historical reliability. No matter how local literatures on the issue appear insufficient the available ones were critically analyzed by cross-checking with other reliable sources. Different legends about origin of coffee were also collected from different areas claiming for coffee’s origin: Arab legends, Christian legend, Kaffa legends and the Oromo legends were examined. Oral sources were collected from local elders from the two competing areas believed to have been the birth place of coffee: the province of Kaffa (proper Kaffa), area south of Gojeb river, with its special area called Mankira and from northern Kaffa province (formerly called), an area north of Gojeb river of current Jimma zone of Gomma Woreda of Coocee district. A total of seven days field work has been conducted in these two areas through which extensive observation and collection of available sources about coffee was made. One archival material was obtained from the former Kaffa province of Limmu Awraja of current Gomma district, which was contributed by Abba Gibe Abba Roro forty years back on the issue of coffee’s origin. Finally, to compare the two areas’ climatic condition which suits coffee plantation and the changing scenario over years, relevant secondary data were also used.

Keywords: Coffee, Mankira, Coocee, Gojeb River

The origin of coffee
Although numerous researches have so far been carried out on the economics (its production, distribution and consumption) of coffee, its exact origin has not yet received genuine historical study. In fact, this does not mean that none of the researches done on coffee have attempted to provide general clues to its original source. Rather it is to mean that neither unanimous evidences nor exact area have hitherto been provided on the subject. In other words, the secondary sources produced on the origin of coffee are not only demonstrating general location but they also provide contentious ideas about the original home of coffee. Consequently, confusing and controversial evidences have been created about the historical root of coffee.
The main purpose of this chapter is, thus, to analyze those contentious secondary sources on the origin of coffee on one hand and to provide clear explanation about its exact origin on the other. Clear explanation can be provided just based on several reliable secondary sources and interview results gathered from knowledgeable elders.

**Analysis of Contentious Secondary Sources**

Sources which demonstrate the origin of coffee can be grouped into unreliable and reliable sources. This makes them contentious. The unreliable ones can further be divided into sources which claim coffee as if it had been originated outside the frontier of Ethiopia and those which argue that it has been emerged from Ethiopia. The reliable sources provide more or less the same geographical location as the historical root of coffee. We shall look at their details in the ensuing analyses.

1. **Unreliable Secondary Sources**

Before providing critical review of those unreliable sources about the origin of coffee we need to know what constitutes reliability in historical evidences. Historical sources are reliable if they consistently provide similar evidence to the same question. For example, the question “Where is the origin of coffee?” must have similar or one answer by different sources or authors. Likewise, sources which offer the same geographical area for the origin of coffee are reliable because they either appear premature claims or they are not substantiated by dependable historical research. For example, one source argues that coffee has been evolved from Sudan\(^1\) and the other says that it was originated in Yemen.\(^2\) these sources would never become reliable unless they are supported by other similar claims by different professional historians.

The other unreliable sources about the origin of coffee concentrate on current Kaffa as a birth place of coffee. These sources entail Bekele’s publication on the history of the kingdom of Kaffa with its specific theme entitled “The birth place of coffee”, Kaffa’s official website and bulletin\(^3\). We have critically reviewed these sources and examined them against other evidences and found that they appear more of fallacious. These sources are more likely fallacious because they not only rely on presumptuous connections among terminologies but they also did not take in to account other possible areas other than current Kaffa where coffee might have emerged first. In this regard, Bekele had tried to state that current Kaffa, with its special place known as Mankira, is the birth place of coffee. To ensure his claim, Bekele has relied on three misleading factors. First, he claims that the name coffee was initially derived from the term Kaffa so that the kingdom of Kaffa is an unquestionable birth place of coffee. Second, he maintains that the Amharic name ‘Bunna’ has been evolved from a Kaffa term named “Bunno”. Thirdly, Bekele seems to have accepted the laying of foundation stone for “Millennium Coffee Museum” at Bonga town by President Girma W/Giorgios in 2007 as unwavering evidence for Kaffa to be the original homeland of coffee plant (coffee Arabica).

Despite Bekele’s claims and the fanciful reasons he has provided, several sources demonstrate areas north of the Gojeb and East of Didhessa River valleys as historical homeland of coffee plant. Such sources have been partially entertained in the preceding chapter and in fact they are also emphasized
in this chapter for their reliability. Unlike those sources which concentrate on Kaffa as original root of coffee, sources which argue that coffee has first been discovered in the area somewhere between the Gojeb and Didhessa River valleys, more likely in former Jimma and Limmu Awurajas, are numerous and are indeed contributed by various social sciences like Makuria Bulcha, Marital de’Salviac, Richard Pankhurst, Gulumma Gemeda and Mohammed Hansen. These authors refute Bekele’s assertion that Kaffa is the original home of coffee. Besides, Bekele’s assertion appears more of erroneous because he has merely thought that there might be possible connection between the terms coffee—Kaffa and “Bunna”—“Bunno”.

On the contrary, the name coffee was rightly derived from an Arabic word “Cahveh”. The word “Cahveh” is widely known as “Qawah” and it was “Cahveh” which was emerged earlier than coffee. Furthermore, well distilled scientific evidences reveal that the name “coffee” was derived from the term ‘coffien’, which means the stimulant substance or drug naturally found in coffee. Studies have also two other types of coffee: coffee Liberica and coffee Robusta. If the name “coffee” had been derived from the term “Kaffa”, we could have got two different names for these two coffee varieties. But there are no such names. This implies that the claim that coffee has been derived from the word “Kaffa” has no credible scientific root.

With regard to Bekele’s assertion that the Amharic term “Bunna” has been derived from Kaffa’s term called “Bunno” seems invalid articulation. This is because he appears to have inaccurately incorporated possible association between the two terms. Bekele might have personally sensed that way and yielded unscientific evidence. It is unscientific because there is no scientific evidence which exhibits any kind of relation which might have existed between “Bunna” and “Bunno”. Therefore, Bekele’s argument is unreliable in historical standard for it suffered from risk of distortion. Distorted evidences are not only untrustworthy but also anachronistic in history.

Still, it can be argued that the name “Bunna” is more likely derived from an Arabic word ‘Bunn’ etymologically, this ‘Bunn’ is said to have been rooted from ‘al-bunn’. Sources indicate that ‘Bunn’ is a type of tree that has existed in Yemen and before the 15\textsuperscript{th} century the Arab people have used to drink the “Bunn” beans as a stimulant. “Bunn” is said to have similar feature with coffee tree as it gives berries and beans which are nearly identical with that of coffee tree. It was in this connection that the Arabs have named this ‘Bun’ as ‘Qawah’. Thus, one can assert that it was rather from the Arab word ‘Bunn’ that the word ‘Bunna’ was derived though Bekele reports that the latter has been derived from Kaffa’s term “Bunno”. Actually, Bekele has no clear position with regard to his arguments. His assertions contradict each other. On one hand, he argues that the Amharic word ‘Bunna’ is a derivative of Kaffa’s term called “Bunno”. On the other hand, he expresses that the word ‘Bunna’ has no basic relation with Kaffa’s linguistic terminologies. As Bekele states, the term ‘Bunna’ is simply a name which had been given to Kaffa woman who had made coffee for the northern traders. so, it was the northern traders who had initially declared the name ‘Bunna’ in Kaffa region after they have been served with coffee by Kaffa woman. This implies that the name ‘Bunna’ might have not been in use before the onset of the long distance trade. Of course, we need to be
cautious here that Kaffa was emerged in the 17th century, with the formation of the Minjo Dynasty; this was almost two centuries earlier than the long distance trade.

Bekele should have gazed at other more potential evidences which could ascertain areas where coffee might have been originated. First, he should have compared all possible connections that might have existed between what he reports as the “Bunno” of Kaffa and the “Bunno” lineage of the nine Ilu sons in the ‘Mecca’ Oromo. This lineage had lived immediate to the northern frontier of current Kaffa, perhaps, occupying large areas which might have involved today’s ‘Coocee’ in Jimma zone. And secondly, he should have compared the historical authenticity of ‘Mankira’ and ‘Coocee’ for possible historical root of coffee. This is because these two areas have remained part of the former Kaffa administrative structure for long though they were separated since the last two decades and became part of distinct administrative zones, current Kaffa and Jimma zones respectively.

Hence, Bekele’s study entitled “History of the kingdom of Kaffa: The birth place of coffee, 1390-1935” should have looked into the possibility of coffee’s root in other areas of former Kaffa administrative structure like Jimma and Limmu ‘Awrajas’ or simply areas north of the Gojeb and East of Didhessa River valleys. Of course, Bekele’s study is methodologically erroneous because Kaffa had been incorporated into Menelik II’s (1889-1913) imperial system in 1897 and thereafter it had no firm autonomous status. Throughout the imperial period and during the Dreg regime Kaffa had served the centralized administrative structure housing areas like Coocee. The latter can be described as more possible historical root of coffee. ‘Coocee’ is a special area in current Gomma district of Jimma zone. So, if Bekele’s argument had concerned this part of former ‘Kaffa kiflehager’ as the birth place of coffee, his study could have got historical credibility. In contrast, his study has remained inconsiderate about this part of former ‘Kaffa kiflehager’ so that it is more probably a pre-schemed and fallacious report in the eyes of genuine historical research. That is, Bekele’s report senses a predetermined fallacy so as to convince the wider public about Mankira of current Kaffa’s original source of coffee.

By way of analysis, it might be sensible to argue that there might also be a possibility of corrupting the Oromo name ‘Buna’ for coffee in an attempt to call it in Amharic as ‘Bunna’. The Oromo have been calling coffee as ‘Buna’ since the 10th century A.D. they still have no other name for coffee. ‘Buna’ is the only word that stands for coffee in every area of Oromo culture, just not only in local nomenclature but also in standardized Oromo language as it was being used for academic consumption ever since the last decade of the 20th century. For this reason, the Amharic name “Bunna” was either a derivative from an Oromo language “Buna” or it might have adopted from Yemen by agents of fortune seekers like that of Khalid the goatherder.

One important point which needs due analysis here is that the Minjo Dynasty of Kaffa was a phenomenon only in the 17th century and there was no Kaffa as such before this period and indeed the Christian kingdom of Kaffa was not allowed to consume coffee until the 17th century. Whereas, the Oromo’s who had been living north of the Gojeb River valleys were consuming coffee since the 10th century. When we compute the time gap between these episodes, we notice about seven centuries or so. Therefore, the Oromo people had begun to consume coffee almost seven hundred years before...
the Christian kingdom of Kaffa. For the Oromo, coffee has got not only economic importance but also longstanding cultural and religious values. For instance, the ‘Buna Qalaa’ ritual is an indigenous Oromo cultural practice wherein the Oromo people prepare lavish feast from a combination of roasted coffee berries and melted butter on many popular cultural and religious occasions like the Geda, Muuduu, buttaa, Guma reconciliation, wedding and other traditional ceremonies. These indigenous rituals have their own entrenched socio-cultural and religious implications that they should not be configured in the absence of ‘Buna Qalaa’ ceremony. This further implies that coffee is an inseparable entity from popular and long aged Oromo cultural and religious life.

Bekele should have considered these historical factors in his attempt to explore the origin of coffee. Instead, he has merely depended on highly localized sources and armchair reports which lack external validity or standard historical credibility. The localized sources and armchair reports that Bekele has used as evidences for his claim that current Kaffa is the birth place of coffee entail Kaffa official bulletin, magazines like Selamta, newspapers like the Ethiopian herald, website sources, and BBC (British Broadcast Corporation) news. In fact, these sources can also be utilized in historical research. But as the origin of coffee has hitherto been remained a critical subject of scholarly debate they can never suffice as valid and reliable sources of historical evidence for the exact origin of coffee. The reason why Bekele had relied on these unreliable sources to locate the origin of coffee in current Kaffa by excluding more pervasive dependable studies is not only a myth but it also needs separate professional research. Bekele appears to have intentionally failed to make use of the more reliable sources on the origin of coffee which have been contributed both by foreign and Ethiopian historical researchers,¹⁵ these sources are reliable because they are many in one. That is, they have been contributed by different authors at different times but still their evidence about the origin of coffee locates one geographical area, between Gojeb and Didhessa River valleys. In addition, these sources are not armchair reports because it is described in their prefaces that they have been produced by professional researchers who have conducted extensive fieldwork and captured first hand information through eye witness with more knowledgeable local elders.

Finally, Bekele had uncritically used the legend of “Kalli” or “Kalliti” as historical witness for the origin of coffee in Kaffa. According to this legend, “Kalli” or “Kalliti” has discovered coffee in the 2nd century A.D. and declared his discovery to the monastery (Bekele, 2002:33; Bunno Magazine 1st edition, No. 10 Kaffa). The idea of this legend is very notorious because of several reasons. First, let alone to Kaffa which was established as a kingdom only in the 17th century A.D. Christianity was not introduced to its northern proper in Ethiopia (Aksum) in the 2nd century A.D. It is obvious that monastery signifies a building in which Christian monks live as a community and Christianity has been introduced to Ethiopia during the 4th century A.D. Second, the legend is at the cost of the widely accepted wisdom about the earliest timeline of coffee among many scholars. A number of scholars had tried to locate the 10th century as the initial period when coffee plant was first identified. Finally, Kaffa had been a strong Christian kingdom even during the medieval period and the Orthodox Christian Church did not allow coffee drink until the 17th century.¹⁶ As Kaffa had remained part of this Christian doctrine it might have not used coffee until the 17th century. Moreover, there is no
source which exhibits that Kaffa had rejected this doctrine and used coffee exclusively. In conclusion, Bekele’s account is incomplete, biased and unreliable witness about the origin of coffee. This conclusion is ultimately drawn based on critical analysis of the factors he stressed, as explained above, that coffee has been originated from Kaffa.

2. Reliable Secondary Sources

As highlighted so far, reliable sources are sources which are consistently able to be trusted. As such, various secondary sources consistently indicate that the former Ennarya region is the exact birth place of coffee. This region is situated between the River valleys of Gojeb in the south, Wama in the north, Gibe in the east and Didhessa in the west. Before the ’Mecca’ Oromo’s engulf of the Ennarya region, this large geographical area is said to have been occupied by the Gonga people of Bosha-Bussase. Historical evidences show that the Hinnaro people, the Bosha-Bussause were forced to evacuate the Ennarya region after engaging in fierce struggle with the Sadacha Oromo of Mecca and crossed the Gojeb River and settled to its southern adjacent. Since the 17th century, the Ennarya region had come under the control of the Oromo people and it was transferred to the Gibe Oromo states in due course. Eventually, the name Ennarya was changed into Limmu Ennarya. This implies that Limmu, formerly identified as Limmu ‘Awraja’, is more likely situated at the center of the engulfed Ennarya region.

The reliable evidences witnessed about the origin of coffee are not only consistent in locating the area within the premises of the aforementioned River valleys as the birth place of coffee. They are also consistent in describing the natural conditions which favor finest coffee growth. Accordingly, the best coffee growing areas are characterized by sufficient rainfall distribution throughout the year, mean annual temperature of 17⁰c-20⁰c; elevations ranging between 1600-2000 meters above Mean sea level and fertile forest covered soil. These evidences are scientifically valid. The reliable sources show that it is particularly the former Limmu and Jimma ‘Awurajas’—initially these areas were part of the Ennarya region—which largely fits the above natural conditions for coffee growth. Before it has been widely disseminated across a space and before the earth’s climatic conditions have begun to reflect more or less rising temperature almost all over the world, coffee is said to suit these natural conditions that were more familiar in the southwestern Ethiopia, particularly former Limmu and Jimma Awurajas.

In these areas, the slight showers of rainfall between December and March would have allowed coffee plants to flower early and to provide the berries with sufficient time to mature during heavy rainfall between April and September. It is also argued that the slight amount of rainfall in February and March would decrease the danger from coffee disease. Coupled with these scientific evidences that have been inferred from natural features of coffee growth, the reliable sources commonly agree that the birth place of coffee belongs to the immediate north of Gojeb River. This area had become part of Kaffa administrative province during the imperial era and remained so during the military regime. So, the immediate northern frontier of the Gojeb River of former Kaffa province was not only the best
coffee producing in Ethiopia but its evidence as the birth place of coffee Arabica has been consistently affirmed by a lot of historical findings.\textsuperscript{25}

Of course, the fact that former Kaffa province had for long comprised of areas north of Gojeb River—the more widely supported and exact birth place of coffee—might have created confusion with the current Kaffa—south of Gojeb River—to be mistakenly regarded as the birth place of coffee. This kind of confusion could have been the direct ramification of turbulences in political administrative structure. The dynamics and fluctuations occurred in the past three consecutive political systems—the imperial, military and federal administrative philosophies—could have a role in obscuring the legitimacy of coffee’s exact origin. For example, the present Jimma zone has remained part of Kaffa administrative structure for about a century\textsuperscript{26} and it is only in the last decade of the 20th century that it has begun to assume this separate zonal status. Indeed, before this period almost all scholars, politicians and laymen alike have used to call Kaffa province whenever they refer to Jimma. This kind of political turbulence and fluxes in administrative structure in Ethiopia have also resulted not only in camouflaging the exact birth place of coffee but it also have woefully buried the historical legacy, heritage and property right of the people who have pioneered in making genuine history on the domestication of coffee in the country.

**Analysis of Primary Sources**

As the matter of the birth place of coffee is still open to scholarly debate, this paper did not entirely depend on secondary sources. Attempts have also been made to capture primary evidences from two potentially competing areas for the origin of coffee. It was through series of conversations with knowledgeable persons about the history of coffee and critical evaluation of available secondary sources on the subject that we were able to identify two potentially competing areas for the birth place of coffee. These are Mankira of current Kaffa zone and Coocee of current Jimma zone.

After identifying these two special areas as competing historical roots of coffee, systematic fieldwork was employed. This was so to conduct interviews with local elders and to access documented archives just to earn primary witness about the exact origin of coffee. Indeed, it is through proper utilization of historical methods such as by approaching knowledgeable elders and conducting systematic interviews with them that one would able to earn dependable historical facts. In line with this, the attempt made to access the elders of Mankira was unsuccessful. It was a failure because concerned authorities of the area were not willing to allow interview with local elders on the subject dealing with the origin of coffee. The implication could be that authorities of the area—who should grant secured permission for historical research on the origin of coffee in their premises—might not only have got firm stand to conceal the truth about the subject but also they were more likely satisfied with the existing unreliable sources which assume Mankira as the origin of coffee. Nevertheless, as the preceding analyses have demonstrated, none of the sources which treat Mankira as the birth place of coffee is trustworthy. Thus, the claim that coffee has been historically rooted from the domain of current Kaffa administrative zone, Mankira at best, would remain invalid and unreliable in history unless proved against professional historical research.
On the contrary, current Jimma zone has got large and consistent evidences as a birth place of coffee. In addition to the reliable secondary sources appraised above, detailed interviews with local Oromo elders reveal that coffee was first domesticated by Oromo ancestors in the 10th century A.D.\textsuperscript{27} as to the interview results with the elders of Gomma district, a specific area known as Coocee is the only birth place of coffee. One relevant archive contributed by Abba Gibe Abba Roorroo, aged 120, in the locality of ‘Coocee’ and an inscription engraved on stone at a specific area called ‘Katta muudaa ga’aa’ (reach for anointing stone) in the same locality\textsuperscript{28} also support the interview results that coffee has been first originated from ‘Coocee’. The archive of Abba Gibe unfolds a story that coffee was first discovered at Coocee and gradually its importance had attracted enemies from the surrounding areas against Oromo residents of Gomma. This was right before the conquest of the area by the ‘naftegna’—Emperor Menelik II’s armed colonial forces. According the archive, the species of coffee plant was protected from uprooting by non-residents of Gomma lest to be transferred to other areas.

The protection strategy was enforced by guarding the areas if coffee plant by heroes skillfully screened out from twenty-eight Oromo lineages of the area. In fact, the archive does not mention these lineages. As result of the increasing significance of coffee plant in the region and its effective protection from predators—non-resident men coming out of the twenty-eight Oromo lineages—considerable conflict had been engaged in 1742 at the area. The archive reveals three witnesses for this assertion. One, it mentions the existence of old men’s narration about the episode. Second, it maintains that the place of trench or ditch which had been dug to block enemy cavalries coming against the frontier of ‘Coocee’s’ coffee is still present. Third, five holes which had been prepared to symbolize the five Oromo Gibe states and their assemblies on how to utilize and sustain coffee species is found in Gomma. The archive of Abba Gibe and other oral traditions of the area about the origin of coffee, of course, need further historical research. But the main idea that one would able to obtain from these primary sources is that coffee is indubitably rooted from ‘Coocee of Gomma district in current Jimma zone which had been part of the Kaffa province for long.

Therefore, it needs thoughtful caution that Coocee had remained part of Kaffa administrative province up until the early 1990s; and that if one argues current Kaffa as historical root of coffee by erroneously mixing with its historical administrative range till 1991, the argument would ultimately become truth in disguise.

Notes
\begin{enumerate}
\item Wrigley Gordon. Coffee: - Longman Publisher (Pte) Ltd, (Singapore, 1998), P1
\item \textit{Ibid.} PP11-12
\item Wrigley Gordon. Coffee: - Longman Publishers (Pte), Ltd, (Singapore, 1988), P9
\item See Oxford Dictionary the Dictionary meaning of ‘Caffeine’ from which Coffee is supposed to have evolved.
\item Wrigley Gordon. PP5, 6, 8.
\end{enumerate}
Ibid. P5

8 Bekele Wolde Miriam. P55


10 Oromo Cultural Tourism Bureau, The History of Oromo People to 16th century, (Addama, Ethiopia, 1996), P156


12 We have been told by elders that Khalid was Arabian fortune seekers, who come to Gamma before about 1000 years ago and employed by herding goat.


18 Guluma Gemeda. Some Notes on Food Crops and Coffee Cultivation in Jimma and Limmu “’Awrajas” Kaffa Administrative Region 1950s to 1970s, (Addis Ababa University, 1986), P6, Mohammed Hassan. P91


20 Ibid.

21 Guluma Gemeda. P91

22 Ibid.

23 Ato Girma Delesa who was at once been Coffee Specialist at Limmu Coffee Plantation told Us about the amount of rainfall available yearly for Coffee Production, from Jimma town.


25 The Archive Contributed by Abba Gibe Abba Rorro, in the locality of Coocee; which now kept by ‘Obbo Ahmed Abba Garo since 1974.E.C a Story that Coffee was firs discovered at ‘Coocee’ and Martial de’ Slavic. P112 and James Mc Cann. P174

26 Laphiso G.Delebo. P287 and the Jimma Town Establishment and Its Development; Jimma from where to where? Paper Conducted for Panel Discussion, (Jimma, Ethiopia, 1995)
Informant; Abba Garo Abba Gibee Guta, Age 75, Abba Tamam Abba Dinagde Age 80, Abba Daffar Abba Sanbi Age 76 Abba Gibe Abba Rorro, Age 120, Sheikh Mohammed Abba Fita Age 65, Elders state that Coffee was First originated from ‘Coocee’ and gradually expanded into the neighbor Areas, collected from interview That made on February 10, 2011 at Coocee kebele.

Ibid, ‘Kattaa Muuduu ga’a’ was a place which came in to use on the memory of Coffee’s discovery and it became sacred place where people gathered to anoint the Stone. The elders’ bless People saying that’’ Kattaa Muuduu ga’a’’ meaning reach for anointing the stone and from the name which ‘katmuduga’ derived

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A study on Gender Treatment in EFL Text Books: Grade 9 and 10 EFL Text Books in Focus

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Abstract

This study analyzed the treatment of gender roles in grade 9 and 10 EFL textbooks in Ethiopia. To this end, systematic quantitative and qualitative analyses were made to examine the way the two sexes were depicted in the textbooks. The first quantitative analysis was made with reference to visibility or frequency of appearances of sexes in texts and illustrations. Secondly, qualitative and quantitative inquiry was carried out into (a) portrayal of characters in occupational roles, b) depiction of sex based activity types (c) portrayals of property ownership and leadership roles of characters, (d) types of adjectives that modify or describe each sex, and (e) pegging of sexist languages in texts and other contents. In order to check whether EFL teachers and students are aware of gender based treatments in the textbook/s they used, questionnaires were dispatched and results were analyzed .The overall results of the content analysis revealed that both textbooks favor males across almost all categories.
used in the content analysis except in domestic or family roles where females were the majority. As a result, more males were portrayed in named, unnamed and illustrated characters than females in the textbooks. In addition, compared to females, males were involved in wide range of occupations. However, female characters in the textbooks were dominantly involved in cooking, home maintenance, child rearing and other domestic activities than males. On the other hand, males are depicted in more types and frequencies of sport and leisure activities than females, and males owned properties with higher value and controlled many leadership positions than females in the textbooks. It was also discovered that majority of the research participants (EFL teachers) were not aware of the dominance of males in named, unnamed and illustrated characters in the textbooks as well as in leadership and other prestigious occupational roles. In addition, EFL teachers, who were considered in this study, found to lack consciousness on the dominance of female characters depiction in domestic roles of the textbooks. In contrast, most research participants (grade 9 and 10 students) were conscious about the supremacy of males in leadership positions and females dominance in domestic (family) roles. Moreover, most of the students, who were considered in this study, were alert that males were modified or described by adjectives like rich, famous and popular than females. These results implied that, the hidden messages of the textbooks were there to be read by students and incorporated into their own life style. Therefore, producing guidelines for curriculum and textbook writers as well as offering training for EFL teachers to minimize the impact of sexism on the teaching and learning process are essential to foster gender fair education.

1. Introduction

1.1. Background of the study

For quite some time in Ethiopia, we have witnessed some pressure from civic organizations, government ministries and human right activists committed towards gender equality, demanding an education system that adheres to gender equality. They have called upon the government to introduce an education system in which females and males would be treated and encouraged to achieve their full potential in the schooling process (Ministry of Education (MOE), 1989). Besides changes that have occurred in the domestic and international sphere, the Federal Democratic Republic of Ethiopia (FDRE) government also raised the concern in Ethiopia for the introduction of an educational policy that takes into account an education system that addresses not only issue of equality but also gender equity or balanced number of female and male students in the schooling process.

But the above changes should be also accompanied by social and cultural changes in the society that the policy operates in. Ali et al (2002) agreed with this idea and noted; “...any educational system can be understood by looking at the values and traditions of its surrounding social system. Changes and renovation in the values, organizations and the needs of a society will inevitably influence its education” (p.1). Therefore, in order to realize the national and global changes, the society should change cultural and other factors that affect gender equality in the country.

In short, this study identifies the treatment of females and males in the current grade 9 and 10 English as foreign language textbooks in Ethiopia. It is on the recognition of the need to eliminate gender bias
through textbooks and the negative results of gender stereotyping in textbooks that the statement of the problems is formed.

1.2 Statement of the problem

The motivation and significance of this research is grounded on the role of textbooks in the teaching and learning process. Textbooks are an important element in the teaching and learning process, because they create the foundation of classroom activities. In addition, textbooks have a humanizing effect and if it is not handled carefully, it could lead to the discrimination of some categories of learners and in this case discrimination based on gender may happen. Otlowski (2003) and Black (2006) also asserted that textbooks are important not only for propagating information but also strengthens what students perceive as suitable gender roles. As a result, the message passed in the textbooks is decisive and it may have either positive or negative impact on learners.

The issue of gender bias and stereotyping in textbooks and other parts of the education system has been a question of concern because of its potential negative effects on learners. It is argued that gender bias in learning materials like textbooks:

- can contribute to cultural prejudice and a biased message that students unfortunately absorb in their learning, and it may affect students ambition and vision (Blumberg, 2007)
- may led learners not involve in their learning actively and they may even feel left out when they are portrayed in a biased way (Porecca, 1984)
- could led learners to feel that they have less value, importance and significance in the society or they may take themselves as unwanted creatures and they may threw the potential they have (Mikael, 1986).
- might tend some readers to lack role models as a result of the omission of some characters (Sunderland, 1994).
- May influence boys and girls about their future role including carrier or they may have a narrow or distorted view on the professional goals open to them (Obura, 1991; Koza, 1994)
- May distort the self-esteem of readers as well as self-concept and perception about others (Michel, 1986).

All the above negative effects in turn become an obstruction or obstacle on realizing gender equality. This idea is also supported by Blumberg (2007) that “stereotyping in learning materials, and too often, teachers expectations of girls and boys, as two cases that affect gender equality negatively” (p.4).

From the above summary of effects of gender bias in textbooks, we can see that minimizing sexism in textbook development must be an indispensable issue that curriculum writers, publishers, teachers and other stakeholders should give adequate attention. However, several studies on language textbooks revealed that sexism is dominantly wide spread. For instance Hertman and Judd (1978), Porreca (1984), Sunderland (1992, 1994), Sunderland et al. (1997), Ansary and Babai (2003), Otlowski (2003) and Tao (2008) among others studied several EFL/ESL textbooks and examined the images of males...
as well as females, frequency appearance of sexes, first place occurrence of females and males, stereotyped roles for females and males, sexist language and so on. The results of their study show that there were severe discrepancies between sexes, and females were derogated and mistreated in most cases.

Consistently, some researchers were also dealt on the portrayal of personality traits in textbooks. Among these researchers, Porreca (1984), Michel (1986), Obura (1991), and Ansary and Babai (2003) are some of them. Most of these researchers have done an intensive literature review using secondary data in their studies and have involved textbooks used in one or more subjects. The findings indicated that women were still symbolized by traditional traits or personality characteristics of being depicted as dependant on men for economic welfare and lower status. Women and girls further portrayed as weak, sensitive, submissive, and so on.

In relation to Ethiopian textbooks, especially EFL textbooks, there were few related local studies on the above issues. These studies were conducted by MOE (1989), Zewdu (2004), Meseret (2007) and others. The results of their study were consistent with the above researches done overseas. MOE (1989) further argued that most textbooks in Ethiopia strongly favor males over females. Therefore, the above problems or negative effects of gender bias in textbooks as well as the situation of Ethiopian EFL textbooks from the above local studies, and the increased demand of the government to realize gender equality and equity motivated me to study the condition of the current grade 9 and grade 10 EFL textbooks in Ethiopia.

In order to attain this, the following eight research questions were formulated:

1. What is the ratio of female and male characters in texts and illustrations?
2. How are males and females depicted in occupational roles in both texts and illustrations?
3. How are females and males portrayed in relation to domestic (family) roles as well as in sport and leisure activities?
4. How are males and females depicted in ownership of property and leadership roles?
5. What types of adjectives describe females and males in the textbooks?
6. What masculine generics (or feminine, if any) constructions are used in the textbooks?
7. What is the frequency with which females preceded males when both are included in a single phrase or sentence?
8. Are EFL teachers and students aware of how males and females are treated in the textbooks?

1.3. Objectives of the study

The main purpose of this study is to find out the treatment of gender in current grade nine and grade ten EFL textbooks in Ethiopia. Based on the foregoing general objective, the researcher has set the following specific objectives:
To assess frequency of appearances of female and male characters in texts and illustrations of the textbooks.

To identify sex-linked job possibilities, stereotype sex jobs and sex based activity types.

To assess the treatment of females and males in ownership of property and leadership roles.

To find out the portrayal of personality characteristics of males and females in the textbooks.

To investigate sexist language in the textbooks.

To appraise and analyze the awareness of teachers’ about the treatment of sexes in the textbooks.

To draw information concerning students’ awareness on gender treatment in the textbooks.

1.4. Significance of the study

Though this study is limited to grade nine and ten EFL textbooks, the findings of the study are expected to have the following significance:

1. It will enable teachers to understand the issue of gender bias better and get awareness on how to combat sexist values and attitudes in EFL textbooks.

2. It will sensitize educators, writers of textbooks, publishers and other interested persons on how they should develop EFL textbooks in the 21st century.

3. It will provide a particular guide to officials and institutions involved in the production of textbooks for tracking down and eliminating sexist prejudice with deliberate forms.

4. It may encourage gender activists, practitioners and policy makers to consider the issue and enact laws which secure diminishing of sexist learning materials faster and positive action may be solicited from them.

5. Ultimately, since there are very few local studies on the issue, it will fill the gap on treatment of gender in Ethiopian EFL textbooks. Furthermore, since most former studies were on exploring gender treatment, this content analysis might be used as a stepping stone to other researchers who are interested to study the level and type of effect that biased textbooks may result on female and male student.

1.5 Limitations of the study

The content analysis focus on only two EFL textbooks and the results of this study may be difficult to generalize in all EFL and other textbooks in Ethiopia.

Due to time constraints, the questionnaire administered only for sample EFL teachers and sample students in Bahir Dar government schools. As a result, the percentage findings from this study might have limitation to generalize about all teachers and all students in Ethiopia.

It is difficult to make a strong connection between the depiction of gender role in the textbooks to be content analyzed and the prevailing gender roles in the society. The usual trend in most developing countries, including Ethiopia, is the lack of numerical data of male and female workers in different
fields. So it has at some incidence proved difficult to relate the gender gaps that have been depicted in textbooks and those that exist in society when discussing the findings.

2. Methodology of the study

2.1. Subjects of the study and sampling

In order to find out the treatment of male and female characters, the researcher focused on all contents of grade 9 and 10 EFL textbooks, which were currently used in Ethiopia. In addition, listening texts used in both grades teachers’ guides were also incorporated in the analysis. These textbooks, which were developed first in 2000 and revised in 2005, are used in all grade 9 and 10 government school students in the curriculum and developed by Institute of Curriculum Development and Research center (ICDR) under the Ministry of Education (MOE).

To supplement the study, the researcher also collected information from sample grade 9 and 10 EFL teachers and students of government high schools in Bahir Dar town, to look into their awareness and attitudes on the treatment of female and male characters in the EFL textbooks. From four government high schools in the town i.e., Bahir Dar Zuria, Fasilo, Ghion and Tana Haik secondary schools, two schools (Fasilo and Tana Haik secondary schools) were selected randomly. Here, all EFL teachers, who were currently working in the two schools, their number is 16, participated in the study. Moreover, 160 students were also selected and participated in this study. From the total student participants, 40 grade 9 and 40 grade 10 students were taken randomly from Fasilo secondary school from the total 1191 grade 9 and 557 grade 10 students. The other 40 grade 9 and 40 grade 10 students were selected from Tana Haik secondary school from the total 1935 grade 9 and 1984 grade 10 students in the same method of sampling. Therefore, 80 grade 9 and 80 grade 10 students were participated in this study and among them males and females were taken equal shares. Students’ responses to each question in the questionnaire were analyzed with the content analysis results.

2.2. Data Collection Instruments

The required data were collected using two instruments. These were the Content Analysis (CA) with the accompanying coding instrument adapted from different researchers and questionnaires for EFL teachers and students independently.

2.2.1. Content Analysis (CA)

Content analysis (CA) involves analyzing of the contents of documentary materials such as textbooks and mass media. This is done by the identification and counting of certain characteristics of documentary materials and by investigating the meaning of the explicit and implicit message (Berlinson, 1954; Cosby, 1977; Palmquisite, 1998). Therefore, the application of content analysis method in investigating gender representation in textbooks has therefore, been appropriate in this study. Porecca (1984), Sunderland (1994) and Ansary and Babai (2003) also confirm that content analysis is the most common tool for assessing of female and male characters representation in EFL/ESL textbooks. They also agreed that both quantitative and qualitative analysis can be made using this method.
In this study, guidelines for content analysis were adapted from different researchers like Porreca (1984), Sunderland (1994) and Valantino (2004). Under this content analysis different element of the textbooks are used as units of analysis.

2.2.2. Questionnaire

Questionnaire is the other tool used to collect information which is supplementary to the major data collected from the textbook through content analysis. The questionnaire is prepared for sample EFL teachers and students who used the textbooks that are under content analyzed. This instrument is used to gather information about EFL teachers and students awareness about the treatment of female and male characters in the textbooks.

2.3. Data collection and analysis procedures

To make the collected data using content analysis suitable for analysis and interpretation, categories were adapted from studies made by Porecca (1984), Sunderland (1994), and Valantino (2004) with some modifications and additions. Based on their studies, six major categories of content analysis were selected under the study. These are, first, the visibility of sex or frequency of appearance of female and male characters in both texts (named and unnamed) and illustrations of the textbooks. The second category in this analysis is occupational roles of male and female characters. Under this category, the type of jobs assigned for females and males were identified in texts and illustrations of the textbooks. In addition, the types of job in which females and males exclusively or stereotypically participate were recorded. Consistently, under the third category sex based activity types or the domestic as well as sport and leisure activities of female and male characters were analyzed. In relation to domestic (family) roles, characters participation in food preparation, child rearing, home maintenances, purchasing and selling as well as agricultural activities were examined. The fourth category is portrayal of males and females in property ownership and leadership roles. Under this category the types of property and leadership roles owned by textbooks characters recorded and analyzed. The fifth category is concerned to document and examine the treatment of males and females personal characteristics in the textbooks. According to Porecca (1984), this can be done by categorizing adjectives used to modify male or female nouns or pronouns. The last category in the content analysis is sexist language in the textbooks and analyzed based on first the appearance of masculine generic construction in the textbooks. Under this analysis sentences and terms that implicitly denote both males and females but have mostly masculine meanings are collected and compared with feminine counterparts. Second, the first place order of appearance (firstness) of females or males in texts, examples, instructions and exercises of the textbooks were analyzed by collecting sentences that female and male nouns or pronouns appeared paired. Then compare the frequency that males appeared first with females. Finally, the questionnaire responses from sample EFL teachers and students were analyzed through percentage and text descriptions based on the results in the content analysis.

3. Results

3.1. Results of the Content Analysis
In the content analysis, the portrayal of female and male characters in both textbooks analyzed based on the following six categories; these are, frequency of appearance or visibility of sexes; occupational roles of females and males; family (domestic) as well as sport and leisure activities of males and females; property ownership and leadership roles of females and males; personality traits or characteristics of males and females and linguistic bias in the textbooks.

3.1.1 Visibility of sex or frequency of appearance of characters

The calculations of frequency of appearances of male and female characters were determined based on illustrated, named and unnamed characters. Close looks on the two textbooks showed several trends as far as illustration of female and male characters are concerned. In the data, all percentages are rounded to the nearest whole number. Thus, the frequency of appearances of females’ illustrations in grade 9 EFL textbook was 38% and males 62 %. As a result, the ratio of female to male illustrated characters is 1:1.6. Consistently, in grade 10 EFL textbook, the percentage of illustrated females were a bit lesser, which was 35% and males’ was 65%. Therefore, the ratio of female to male illustrations in grade 10 EFL textbook was 1:1.9.

In short, the data in this regard showed that the majority of illustrated characters in each textbook were males. The total percentage of illustrated male characters is 63 and for female characters 37. As a result, the general trend of illustration, in both EFL textbooks, show that the total number of male illustrations surpasses that of female by 26% and the ratio of female to male characters illustrations was 1:1.7. Therefore, females were underrepresented in both grade 9 and grade 10 EFL textbooks.

When we scrutinize the frequency of portrayed named male and female characters in both grade 9 and 10 EFL textbooks, more male named characters are depicted compared to those of female characters. The total ratio of female to male named characters in the textbooks is 110 (27.5%) to 286(72.5%) or 1:2.6. This result clearly indicated that male named characters appear more frequently than females in both textbooks. The type of topics covered in textbooks could be a factor for such discrepancy between female and male characters. In line with this, the calculated frequency of unnamed characters showed that there were more male characters than females in both textbooks. Therefore, the total number of unnamed male characters in both textbooks is 534 (60%) males in contrast with 358 (40%) females. From this we can say that the total ratio of female to male unnamed characters in the two EFL textbooks is 358 to 534 or 1:1.5. As a result, male characters of the textbooks were overrepresented than female counterparts in pronouns, common nouns and titles.

3.1.2. Portrayal of characters in occupational roles

In analyzing the portrayal of occupational roles to female and male characters, the pegging was clustered in to three groups. Grouping was based on occupations portrayed to male only, females only and occupations depicted for females and males.

As far as the portrayal of occupational roles to male and female characters is concerned, several patterns, regarding the findings, can be noted. In short the following major findings were seen:
From the total of 70 types of occupations, which were assigned to characters, in the two textbooks, males involved in 61 types of jobs but females engaged in only 24 types of occupations. Besides male characters presented in a wide variety of jobs with great frequency, they were portrayed as holding prestigious stereotyped positions or jobs.

In terms of frequency of involvement as workers, the ratio of males to females in the two textbooks was 168 to 57 or 2.95:1. This means, there were nearly 3 working males to 1 working female in the two textbooks.

Both grade 9 and grade 10 EFL textbooks were also found that they were stereotypical in assigning jobs for female and male characters. As a result, all presidents, scientists, inventors, police officers, managers, lawyers and explorers were males and all nurses, secretaries/typists and prostitutes were females.

3.1.3 Sex based activity types in grade 9 and 10 EFL textbooks

Under this section, the representations of female and male characters of the textbooks in relation to domestic or family roles and in sport and leisure activities were analyzed.

3.1.3.1 Portrayal of characters in family roles or domestic activities

Some reproductive roles or activities related to pregnancy, childbirth and breast-feeding are naturally confined to women. But traditionally activities like child rearing and those activities related to the maintenance of family are also considered as women’s role. The result revealed some notable findings with in the category of domestic and family roles or activities of food preparation, child-rearing, home maintenance, purchasing and selling as well as agricultural related activities. In activities related to food preparation, more females than males were shown. While female characters were involved in seven different activities, males were portrayed in one activity i.e., fetching water. Therefore, in this sub category of cooking and related activities, the discrepancy between two sexes is very clear and the number of females is 25 compared to 1 for that of males. As a result, we can say that cooking and other related activities were assigned mainly for females in the two textbooks. Consistently, in child raring and home maintenance activities, there were more female characters than males. So the total ratio of characters in food preparation, child rearing and home maintenance activities for females to males was 73:29 or 2.52 females to 1 male. Though males were portrayed as buying goods with high economic value than female counterparts, both sexes were treated fairly in purchasing and selling as well as agricultural activities with the frequency and ratio of male to female (15:12 or 1.25:1 and 8:8 or 1:1 respectively), and this was good in relation to gender equality.

3.1.3.2 Portrayal of characters in leisure and sport activities

Concerning this category, both males and females were depicted in leisure and sport activities. A close qualitative look at the findings indicated that both genders were portrayed in visiting, watching TV, playing musical instruments, running, reading book, driving cars, going to church and playing chess. However, males were depicted with higher frequency than females and the frequency also shows a ratio of 14 females to 44 males or 1:3.14. In addition, males were portrayed in exclusive
leisure and sport activities like riding a bicycle, playing football, going to cinema, inviting friends for a party, climbing hills and trees as well as jumping. But females were depicted exclusively in singing songs. Therefore, we can say that male characters were frequently represented than females in leisure and sport activities.

3.1.4 Portrayal of ownership of property and leadership roles of grade 9 and 10 textbooks

Characters

3.1.4.1 Portrayal of characters in the ownership of property

Previous research results on gender treatment in EFL textbooks stated the portrayal of property ownership showed the status of an individual in relation to tenure of power. The kind of goods and assets, the permanence of the owned property and the value of the property an individual owns would determine the status of a male or female character in a given community. A close quantitative look into property ownership of male and female characters of the textbooks revealed, regarding ownership of property in grade 9 and grade 10 textbooks, males were owned properties with higher economic value, and males were depicted frequently as owner of properties than female counterparts. Thus, males owned factory, airplane, tractor, cars (latest), jewelry shop, PLC, bicycle, gun, boat and others whereas females owned organization, necklace, handbag, clothes and others. Even the frequency as the owner of property, female to male was (15: 51 or 1: 3.4).

3.1.4.2. Portrayal of leadership positions to characters

Apart from the possession of power based on ownership of property where the owner has the ability to influence others using economic power, leadership position of characters in different settings can also influence students perception in the status of males and females in the society.

Data in the two textbooks showed that apart from males being depicted to a wider range of leadership positions, the frequency of depiction has been higher than that of females. Of the portrayed 17 leadership positions in educational, military, religious, sport and political settings, males have been depicted in 14 types of positions. Females, on the other hand, were shown in three leadership positions, only in the political settings i.e., as queen, chairperson of women association and chairperson of a kebele. On the other hand, males presented as a director and headmaster on the educational setting. Moreover, males also monopolized leadership positions in religious and sport setting. Even further, males presented as president, prime minister, emperor, prince, sultan and village headman. So, the total category of leadership in a ratio of 5 females to 26 males or 1:5.2. Therefore, males were portrayed more than five times for a single representation of women in leadership positions.

3.1.5. Types and frequency of adjectives to modify female and male characters

In order to do this the nine categories of adjectives used by Porecca (1984) were applied, these were (physical appearance, intellectual /educational, emotion, physical state, personality traits, age, environmentally descriptive, rapport/ reputation and environmentally induced) adjectives. The overall result in this regard showed that both male and female characters were fairly modified by
physical appearance, intellectual/educational and positive personality trait adjectives. However, females were underrepresented in reputation / rapport and environmentally descriptive adjectives than males. In other words, there were more rich, popular and famous males than females in the textbooks. On the other hand, males were frequently modified by negative personal traits (as aggressive, rude, selfish, dirty, mean . . . etc) and physical state adjectives (weak, sick, tired etc) than females.

3.1.6. Sexist language in grade 9 and 10 EFL textbooks

In the analysis of gender in EFL textbooks, the use of generics, nouns and pronouns has been looked into to determine if the language is gender biased or not. In this study two manifestation of gender bias in the textbooks language use were examined. These are masculine generic construction and order of appearance or ‘firstness’ of sexes when they appeared at the same time. In relation to this, the general findings show that there were masculine generic constructions in both textbooks, and masculine pronouns like (he/him/his) were used to describe all human beings. Moreover, the masculine noun ‘man’ and false generics like policeman, chairman, headman, man-made, manpower watchman, cattle man, superhighway man etc were used to describe all human beings in the textbooks. For this, the following were taken as examples;

E.g., If a person is infected with HIV, he is said to be HIV positive. (Grade 9, p.39)

- The general command his officers to attack the town at once. (Grade 9, p.140)
- The dentist gave me an injection, so he was able to remove my tooth painlessly. (Grade 10, p.11)

- If you see any AIDS victim, help him. (Grade 9, p.39)

Habitat is the natural environment of a man, animal or plant. (Grade 9, p.197)

Rivers have always been important in the lives of men. (Grade 10, p.199) etc

In relation to order of appearance of sexes when they appeared paired (firstness) in sentences or phrases, the finding in the two EFL textbooks showed that there were 30 occasions that males and females appeared paired in sentences and phrases. Among these, females appeared first 7 times but males appeared first 23 times. Therefore, the ratio in first place occurrences of females to males was 7 to 23 or 1: 3.3. As a result, males were frequently appeared or mentioned first than females in both grade 9 and grade 10 EFL textbooks.

3.2 Results of teachers’ and students questionnaire

It was discovered that majority of the EFL teachers, who participated in the study, were not aware of the dominance of males in named, unnamed and illustrated characters in the textbooks as well as in leadership and other prestigious occupational roles. In addition, most of the EFL teachers found to lack consciousness on the dominance of female characters depiction in domestic (family) roles in both textbooks. In contrast, most of the sample students in grade 9 and 10, who participated in this study, were alert that males were dominant in leadership positions and females were dominant in domestic activities in their EFL textbooks. Moreover, most of these sample grade 9 and 10 students were
conscious that male characters in the textbooks were modified by environmentally descriptive and rapport adjectives (like rich, famous, popular) more frequently than female character counterparts in their textbooks. Furthermore, student participants of this study were aware of the fact that males were described by more negative personal trait adjectives (like mean, selfish, aggressive, dirty, rude...etc) than female characters in their textbooks.

4. Discussion and Recommendation

4.1 Discussion

Assessment of treatment of female and male textbook characters in currently used grade 9 and grade 10 EFL textbooks revealed that females often appeared less visible than men in named, unnamed and illustrated categories of frequency of appearances. Evidences also found that the omission of female named characters was very worse and male-marked named characters were depicted more than twice as frequent as female marked named characters in both grade 9 and grade 10 EFL textbooks (see Table 4.2). However, there seems to be better treatment concerning unnamed characters of males and females, since the difference in ratio has decreased (see Table 4.3).

The omission of names of many female characters in the textbooks compared to male characters could have a negative effect on the formation of positive identities to female learners. Since names are important identities which signify a person’s existence, position in a society and others in a community. The findings of this study, in the category of frequency of appearance, are consistent with previous research works. Educators like Porecca (1984), Ansary and Babai (2003), Otlowski (2003), Lee and Collins (2006) and Tao (2008) reported that from all texts and illustrated characters in their study most of them were males, and males were more visible than females.

Concerning occupational roles of textbooks characters, the findings of this study showed that male characters were involved in more diversified types of jobs with greater frequency than female counterparts in both textbooks. Although females were seen in some professional jobs which traditional taken as males job like pilot and engineer and males as cook and barman, still stereotyping of sex in jobs were seen in the findings. As a result, males controlled the prestigious and leadership roles or jobs like president, prime minister, emperor, inventor, scientist and others, females were also depicted frequently in the traditional feminine jobs like secretary, nurse, prostitute and others (see Table 4.4). Similar findings were documented by Hertman and Judd (1978), Ginset (1988), Sunderland et al (1997), Valantino (2004) and Meseret (2007) that females were portrayed in the textbooks with fewer types of occupations than males. Sporadically, females were also seen as teacher, doctor, athlete like males in the texts. Since there were still stereotyping of jobs for males and females in both textbooks such pegging confines the readers to a narrow view of males and females related traditional occupations at their exposure. Although such portrayal affects both boys and girls negatively, the most affected individuals are girls whose employment is narrow. Because in the socialization of learners, who use these textbooks, exposed boys to more role models of occupations than females.
In relation to domestic and other family roles of the analysis, both textbooks revealed that females were dominantly portrayed in food preparation, child rearing and home maintenance activities. For every man involving in these three types of domestic activities of the text there were more than seven women participants (see Table 4.5). Such depictions, where mostly women are involved in upbringing of children and other home maintenance activities, possibly affect users of the textbooks negatively. In other words, readers may assume that the activities of nurturing and rearing of children as well as doing household activities are the domain of mothers and not fathers. The result of this study coincided with the findings by Michel (1986), Obura (1991), Davies (1995), and Lee and Collins (2006) that in most family and domestic activities males were systematically unqualified in most textbooks and females were dominantly involved. If we look at in a logical manner, the involvement of men in such activities would not only help to lessen the burden of women in carrying out domestic roles but it may also provide for the psychological needs of the child such as parental love and protection. Therefore, the noted depiction of women dominance in domestic activities in both grade 9 and grade 10 textbook does not adhere to the taught curriculum and the accompanying teaching and learning strategies. Rather it is the result of a hidden curriculum when the official curriculum translated to the textbooks by writers or authors.

Under this category of domestic and family roles, both female and male characters in the textbook seemed to be frequently involved fairly is agricultural as well as selling and purchasing or shopping activities (see Table 4.5). However, when we have a closer scrutiny on their purchasing power there was still discrimination that males purchased items with higher economic value than females. Thus, males were portrayed in buying house, car, expensive watch, radio, expensive jacket, goats and others, but females buy food for domestic use items like tomatoes, banana, fruits and cloths are some. Here, the purchasing power may also have other implications and it can be noted that purchases by males like cars and radios seemed to show the economic and information power of males. In addition, selling activities like buying denotes economic power possessed by a person.

Apart from the above activities, women were far less visible than men in sport and leisure activities in the textbooks analysis (see Table 4.6). The result of the analysis shows that males portrayed chiefly in the out door active roles like ridding bicycle, playing football, driving cars, climbing hill and others. Similar findings were also done by Obura (1991) and Ansary and Babai (2003) and they reported that males involved in outdoor active roles than females. As Obara (1991) suggested, participating in sports and games may led boys to acquire characteristics related to leadership, competitive spirit and availability of several options for future occupational carriers. However, a closer look on Table 4.6 also showed that male characters spend their leisure time by smoking cigarette, using drags and drinking alcohol behaviors or traits and activities in the illustrations and texts of the textbooks. Such misbehaving can be taken as unfair generalization.

It is not true that females are not involved in the above negative behaviors. Because, it is now common to find in the media, courts and law reports that show both women and men involved in such activities. Inconsistent with this finding, Davies (1995) also found that mostly bad behaviors like stealing, cruelty, drug abuse and alcoholism associated with males. Therefore, textbooks need to
portray the appropriate positive and negative personality traits or behaviors for both sexes to imitate and judge the merit of such behavior.

The other signal of sexist stereotypes in the content analysis was seen concerning ownership of property and leadership positions of females and males in the textbooks. In relation to the pegging of properties owned by females were stereotyped, and unlike the organization, the necklace and handbags owned by females have less economic value. However, a close look on the kind of property owned by males only shows that most of them are of a higher status and value. These properties were like factory, PLC, airplanes, house(villa), tractor ,latest (Toyota) car, jewelry shop, radio, bicycle, expensive watch, guns and others (see Table 4.7). Such property ownership associated with ownership of economic and informational power. Both the economic power and information power may empower a person to acquire leadership positions in the society. This result is consistent with the findings of Michel (1986) and Obura (1991).

An inquiry into gender portrayal of leadership positions to textbook characters further show serious stereotyping on the two textbooks. As can be noted, the difference between males and females in leadership position is very conspicuous for textbooks used in grade 9 and 10 and all the leadership positions in educational, military and sport setting were controlled by males as director, headmaster, general, inspector and coach of chess sport (see Table 4.8). Even in the political setting, all presidents, prime Minster, emperors, prince and sultan were males but females were depicted here as a chairwomen of the rural women association and chair person of the kebele. The findings of this study are consistent with some previous research works. Researchers like Porecca (1984), Obura (1991) and Ojho and Roul (2004) reported that all presidents, ministers and other leadership positions in different textbooks were males’ domain. The above results of this study seemed to show that leadership, especially in the educational, military and sport settings does not include spheres of life where women are leaders. As a result of such depiction, girls and women who read these books were possibly denied models related to leadership and leadership roles may be taken for granted to be monopolized by of males.

In the adjective categories, the results revealed along with physical appearance varies with the findings of local researchers like (Zewdu ,2004; Meseret ,2007) as well as the oversea researcher Porecca (1984) that they reported females were described highly in adjectives of physical appearance and negative emotional or state of mind adjectives. However, in this study males and females fairly represented in adjectives to show physical appearances like beautiful for females and handsome and best looking for males. The same fair treatments in terms of frequency were also seen under this category.

In addition, this study differ from the above researchers result since more ‘sick’, ‘tired’, ‘lazy’ and ‘ill’ males than females are described by physical state /condition adjectives. On the other hand, fair types of positive personality traits were given for both males and females. As a result, adjectives like successful, faithful, kind, good, and independent etc. were describing both females and males. However, males were portrayed with large types of negative personality traits than females.
The other discrimination based on sex in relation to personality characteristics or adjectives that modify females and males were seen in the category of environmentally descriptive and rapport or reputation adjectives. In both categories, females were disadvantaged. Males were portrayed as rich more frequently than females. In addition, there were more popular and famous males than females in the textbooks. Moreover, as can be noted from the same Table 4.9, though both females and males were described as young and old, males were portrayed as ‘old’ more frequently than females. This may be because, sometimes, the same adjectives may have different connotations when they are used with female and male subjects. For example, according to Sunderland (1994), the adjective ‘old’ when it described females, it seems to attach a more negative meaning like loneliness or hopelessness. But when it is used with males it can mean respect, and wisdom. Therefore, the describing of males as ‘old’ may be taken as positive.

With regard to linguistic analysis of the textbooks the result revealed that the ‘generic’ use of masculine pronouns (he/him/his) as well as masculine noun like ‘man’ was highly seen in both grade 9 and 10 EFL textbooks. Therefore, masculine generics were used to convey a message that refer to people in general or whenever the sex of the referent is not known. UNESCO (1999) and Florent et al (1994) suggested that such sexist generic terms which were found in the textbooks can be gender fair by replacing them with non sexist words; like watchman (guard), policeman (police officer), manpower (work force), man made (artificial or synthetic), chairman (chair person), fisherman (fisher), businessmen (business manager, business people) and others. It also appears that both grade 9 and 10 EFL textbooks writers tried to minimize the tendency to use masculine generics by pluralizing and using female and male marked pronouns together but order of appearance of sexes and males when appeared in the same sentences also told us the other discrimination based on sex or firstness. In the category of order of appearance or ‘firstness’, the content analysis revealed that male nouns or pronouns often appeared first than females. The findings of this study on masculine generics as well as order of appearance of sexes are consistent with previous local research works by Zewdu (2004) and Meseret (2007) on Grade 11 and grade 7 and 8 EFL textbooks respectively as well as Lee and Collins (2006) from the over seas. In relation to the order of appearance, whenever brother / sister, his/ her, she/ he, girls /boys, sir/ madam, female/ male, men/ women ,husband/ wife appeared paired ,and often times masculine tends to come first in both grade 9 and 10 EFL textbook. This may reinforce the second place status of females (Sunderland, 1994). Therefore, Sunderland suggested, it can be easily avoided by mixing their place of appearance.

It is suggested here that attempts to portray females in EFL textbooks in current use through invisibility, stereotyped role allocation, overt put downs in their personal characteristics and using sexist language have been made mostly in a concealed level of knowledge. Indeed, language plays such an unintentional social function in our life and is so entangled with our culture that is often relatively difficult to consciously follow and make them stop gender bias in every ones language. Perhaps, that is the reason why sexist status has not been essentially alleviated even in western developed states where guidelines set to minimize sexism in publication is practiced. Therefore,
getting awareness of the issue is the first step to combat sexism, and in this context teachers could play essential roles.

All said, it should be emphasized here that, in this study, the researcher studied the treatment of gender in only two EFL textbooks. Perhaps, further research on a wide range of currently used EFL and other textbooks may give us theoretically sound indications about the status of gender treatment of different textbooks in Ethiopia as well as the effects that biased textbook may cause on the learners.

4.2 Recommendations

Since education is a vital bridge of socialization, the message transferred through textbooks should be fair for both males and females. Therefore, curriculum and textbook writers with the Ministry of Education (MOE) should coordinate the designing of specific and elaborate analytical checklist to enable the identification of gender bias in textbooks. In line with this, The Ministry of Education (MOE) and other stakeholders should also train teachers on identifying and critically review gender stereotyping in textbooks and enabling them to use instructional materials in a manner that promotes gender equality.

References

Ali A; Aksoy, G; Erdogan, N and Gok, F. (2002). Content Analysis for gender bias in Turkish Elementary school textbooks. Istanbul; Bogaziei University.


Treasures of the Lake Zway Churches and Monastery, South-Central Ethiopia

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Abstract

Harboring the invaluable religious treasures of the mainland churches and monasteries of the Ethiopian Orthodox church during those periods of persecution in the 9th and 16th centuries AD, the island churches and monastery of Lake Zway possess a large number of the priceless sacred treasures ranging from holy arks through manuscripts and crosses to the various religious paraphernalia pertaining to the ancient and early medieval times. The Lake Churches and monastery house at present about 48 holy arks sharing the many other holy arks for the foundation of the numerous churches stretching from the Holy Savior church of Adama (formerly Nazret) in the north to the St Michael church of Shashemene in the south; from the St George church of Golja, Arsi, in the east to the St Michael church of Éla259, near the town of Meki, in the west. It is also to the same lake

259 For small local names as well as Amharic and Ge’ez words, the following transliteration system has been used in the entire paper:

A. The seven sounds of the Ethiopic alphabet are represented as follows:

<table>
<thead>
<tr>
<th>Order</th>
<th>Sound</th>
<th>Transliteration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>ā</td>
<td>Bā</td>
</tr>
<tr>
<td>2nd</td>
<td>āʔ</td>
<td>Bu</td>
</tr>
<tr>
<td>3rd</td>
<td>ā,</td>
<td>Bi</td>
</tr>
<tr>
<td>4th</td>
<td>āʔ</td>
<td>Ba</td>
</tr>
<tr>
<td>5th</td>
<td>āথ</td>
<td>Bē</td>
</tr>
<tr>
<td>6th</td>
<td>āʔ</td>
<td>Be</td>
</tr>
<tr>
<td>7th</td>
<td>āʔ</td>
<td>Bo</td>
</tr>
</tbody>
</table>

B. Palatalized sounds are represented as follows:

<table>
<thead>
<tr>
<th>Sound</th>
<th>Transliteration</th>
</tr>
</thead>
<tbody>
<tr>
<td>āʔ</td>
<td>Šā</td>
</tr>
<tr>
<td>āʔ</td>
<td>Čā</td>
</tr>
<tr>
<td>y</td>
<td>አኈ</td>
</tr>
<tr>
<td>y</td>
<td>እ Ja</td>
</tr>
<tr>
<td>ኧ</td>
<td>ከ Zhā</td>
</tr>
</tbody>
</table>

C. Glottalized sounds are represented as follows:

<table>
<thead>
<tr>
<th>Sound</th>
<th>Transliteration</th>
</tr>
</thead>
<tbody>
<tr>
<td>ከ</td>
<td>Qā</td>
</tr>
<tr>
<td>m</td>
<td>ር Tā</td>
</tr>
<tr>
<td>m</td>
<td>ር Čā</td>
</tr>
<tr>
<td>ሱ/.pojo</td>
<td>ሱ ሱ</td>
</tr>
</tbody>
</table>
churches and monastery that the popular Qulebbi Gebre’él church of Harar attributes its origin. In terms of manuscripts, the Lake sacred sites are the cradle of the two Ge’ez letters of Queen Eleni and Emperor Libne Dingil sent to the kings of Portugal during their time of difficulty as a result of the increasing pressure of the Adal forces. There also discovered in the same sites the important book used by Emperor Menilik II to resolve the religious controversy among the Sost Ledät, Qebat and Hulät Ledät believers in favor of the Hulät Ledät / Tewahido doctrine. Currently, the Lake churches and monastery are seat of about 45 oldest manuscripts the most important of which are Gādlä Qedusan (Book of Saints), Māşehafä Hénok (Book of Enoch) and Gādlä Kaléb (the Hagiography of Kaléb). The seven oldest crosses of the Latin Patée type, the two oldest Awds (Big dishes used to present the Holy Communion to the receivers), the Atronus (Book Stand) endowed by Empress Zewditi and the Māqwamiya (Staff) endowed by the late Abunä Péţros the martyred are some of the other treasures making the same Lake churches and monastery their home.

Lake Zway: An Overview

Lake Zway is one of the seven Rift Valley Lakes of Ethiopia, which is found at the northern tip of this Lakes’ region. It is located at a distance of about 160km, south of Addis Ababa on the main road to the town of Shashamane. More specifically, it lies to the east of Zway town, west of Asella town, south of Mount Bora and north of Mount Alutto.

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<table>
<thead>
<tr>
<th>( )</th>
<th>( Pā )</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. For words having the sound of the sixth alphabet at the end, it is not necessary to add the representing letter of the sound.</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td>( \nu )</td>
</tr>
<tr>
<td>( \nu \nu )</td>
<td>Hagär</td>
</tr>
<tr>
<td>( \nu \nu \nu \nu \nu )</td>
<td>Māmeher</td>
</tr>
<tr>
<td>E. Consecutive vowels are usually separated by apostrophe.</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td>( \theta \theta )</td>
</tr>
<tr>
<td>( \theta \theta \theta )</td>
<td>Bā’al</td>
</tr>
<tr>
<td>F. Stressed Sounds are usually represented by doubling the consonant.</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td>( \theta \theta \theta )</td>
</tr>
<tr>
<td>Quelabbi</td>
<td></td>
</tr>
</tbody>
</table>

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262 Tesfaye, p.1; Tuma, p. iv.
The Lake is roughly heart-shaped covering an area of 434km$^2$. Its average depth is 4m and is the most shallowest Lake among the seven. In terms of its altitude, however, it is found at the highest elevation in this Rift Valley region measuring a height of about 1846m above sea level.

The water surface of the Lake is marked by five volcanic islands which are commonly called Gälila, Däbrä Sina, Ṭädéča, Fundurro and Tullu Guddo. The names of the first two islands are of Biblical in origin: Galilee and Mount Sinai respectively. While those of the last three are of Oromo: Ṭädéča to mean “acacia island,” Fundurro to mean “near to the mainland” and Tullu Guddo to mean “big mountain.” Their original names are, however, Aysut, Famat (Gétésémani) and Däbrä Şeyon respectively, and unlike the first two original names, the last original name of Däbrä Şeyon is widely used particularly in the religious history of the Lake islands, and as its Oromo name proves, the island of Däbrä Şeyon is the biggest of all the five islands in the Lake.

Each of the five islands of the Lake is dedicated to a single church. The church on Gälila is dedicated to Kahenatä Sämay (Priests of the Heaven), while that on Däbrä Sina to Dengel Mareyam (Virgin Mary). The church on Ṭädéča is dedicated to Father Abreham and that on Fundurro to Arba’etu

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264 Mesfin, p.48.


271 Most people usually confuse this name of the holy ark with name of the other holy ark - St. Ṭäklä-Haymanot because of the celebration of the two holy arks on the same date of each month, i.e. on the 24th day of every month according to the Ethiopian calendar.
Ensesa (Four Beasts of the Apocalypse). The pioneering church at Däbrä Şeyon is dedicated to Şeyon Mareyam (St. Mary of Zion), and it is a site of monastery unlike the rest four churches.\textsuperscript{272}

A large number of the invaluable religious treasures of the Ethiopian Orthodox Church were transferred and deposited in the above Lake churches and monastery for safe keeping during the periods of persecution of initially Yodit, nicknamed Gudit or Esato, (possibly around the 10\textsuperscript{th} century) and Imam Ahmed Ibn Ibrahim al Ghazi, nicknamed Graň, (during the 16\textsuperscript{th} century)\textsuperscript{273}; and no matter how King Sahelä Sellassé of Shewa later tried to recover these treasures, his efforts remained...


unsuccessful because of his fear of the Lake hippopotamus.\textsuperscript{274} The current sizeable treasures of the Lake Churches and monastery are, therefore, remnants of such an early deposit except a few obtained through endowments.

The aim of the present article is thus to assess these treasures in their type in line with highlighting those known for their discoveries in the same Lake sacred places.

**The Treasures**

**1.1. Holy Arks**

Even though no source providing their actual number is there, a large number of the nearby mainland churches, particularly those stretching from the town of Adama to that of Shashemene and also those around the town of Asella, are believed to be sacred with the holy arks brought from the Lake Zway churches and monastery.\textsuperscript{275} The widely known of these mainland churches include the two Mädhani’alâm churches each at Adama and Alemtena,\textsuperscript{276} Qedus Mika’él and Qedus Giyorgis churches at Meki, Qedus Gâbré’él church at Wäyyo, Abunä Tâklâ-Haymanot church at Abosa,\textsuperscript{277} Qedest Mareyam and Qedus Mika’él churches at Shashemene,\textsuperscript{278} Qedus Giyorgis church at Golja\textsuperscript{279} and the two aforementioned churches of Qedest Mareyam and Qedus Mika’él at Adami-Tullu and Bočésa respectively. It is, nevertheless, too difficult to distinguish from which of the five Lake churches were these holy arks of the mainland churches taken except the Qedus Giyorgis holy ark of Meki, Qedest Mareyam holy ark of Adami-Tullu and Qedus Mika’él holy ark of Bočésa each of which was taken from the Şeyon Mareyam church of the monastery of Däbrä Şeyon,\textsuperscript{280} Dengel Mareyam church of Däbrä Sina and Kahrenatâ Sämay church of Gälila respectively.

Who is well remembered in bringing out much of the above holy arks of the mainland churches from the Lake sacred sites is an outside monk by the name - Aba Isayeyas.\textsuperscript{281} He had been living in the first

\textsuperscript{274} Cornwallis Harris, *The Highlands of Ethiopia*, vol. II (London: Longman, Brown, Green And Longmans, 1844) pp.31-33.

\textsuperscript{275} Informants: Banté, Semé G/Kidan, Mâlaku, G/Mäsqäl, Tâsfayé Nâbi, Tâsfayé Édätto, Zâwgä, Bädané, Bârréssa, Fâyiso Féllo, Hinsénë Waqé, W/Mika’él Jima, Aba Asrat, H/Giyorgis Asé, K/Mareyam Dâgaga, Tadâssä Aşé, Zârihun and Tâlafinos; Ergätä-Quî, p.8.

\textsuperscript{276} Informants: *Ibid.*, except W/Mika’él, H/Giyorgis, K/Mareyam and Tadâssä.

\textsuperscript{277} *Ibid.*, W/Mika’él, H/Giyorgis, K/Mareyam and Tadâssä.

\textsuperscript{278} *Ibid.*, except Tâsfayé Édätto, Fâyiso, Hinsénë, H/Giyorgis, K/Mareyam and Tadâssä.

\textsuperscript{279} *Ibid.*, Tâsfayé Édätto, Fâyiso, Hinsénë, H/Giyorgis, K/Mareyam, Tadâssä but W/Mika’él.

\textsuperscript{280} “Mâşehafä Genzät,” At the same island monastery of Däbrä Şeyon. The church was established in 1932/33.

\textsuperscript{281} Informants: *Ibid.*, W/Mika’él.
half of the twentieth century and he used to make frequent voyages to the island churches in order to deliver church services.\(^{282}\)

Apart from the above holy arks of the nearby mainland churches, the most prominent holy ark of the Ethiopian Orthodox Church, Qulebbi *Qedus Gäbre’él*, also traces its discovery to the Lake Zway churches, specifically to the former - *Tabotä Iyäsus* church of the monastery of Däbrä Şeyon.\(^{283}\) The holy ark was brought to the island together with the Holy Ark of the Covenant during the destructive years of Yodit.\(^{284}\) When the Holy Ark of the Covenant was returned to Aksum, however, this holy ark of Gäbre’él, which was believed to be engraved by St, Mark of the Gospel,\(^{285}\) was left in the island church unconsciously.\(^{286}\) Later, a hermit by the name - *Aba Léwi* was sent from Aksum to bring back this holy ark from the island church.\(^{287}\) The hermit, nevertheless, did not go back to Aksum carrying the holy ark. He, instead, went to Qulebbi of Harär being led by the divine power of the holy ark. He stayed at Qulebbi until his death keeping the holy ark with due respect in a certain cave in the region. On the eve of his death, therefore, he left a note on a flat stone around the cave remarking the existence of this holy ark of Gäbre’él in hidden place of the area and the later prominence of the place due to the great miracles the holy ark would do to the religious people.\(^{288}\)

The engraved note left by the hermit, *Aba Léwi*, was discovered by a small group of clergymen who had been migrating crossing the area of Qulebbi due to their persecution by the Adal forces during the 16th century conflict. They copied the script on one of the manuscripts they carried for safekeeping, *Mäşehafä Qälämêntos*. They finally placed this manuscript in the Lake Zway monastery of Däbrä Şeyon from which, as they read from the engraved script, the aforementioned holy ark of Gäbre’él was taken.\(^{289}\) When *Ras Mäkonen Wäldä Mika’él*, founder of the later church, read this manuscript bringing it form the island monastery, therefore, he found the note.\(^{290}\) Consequently, he built the

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\(^{282}\) *Ibid.* It was the same monk, *Aba Isayeyas*, who took the above *Qedus Giyorgis* holy ark of Meki from the Şeyon Mareyam church of the monastery of Däbrä Şeyon in 1932/33. See “Mäşehafä Genzät” of the same island monastery.

\(^{283}\) *Informants: Ibid., Abunä Natna’él.* Initially, the church at the monastery of Däbrä Şeyon was dedicated to the holy ark of Tabotä Iyäsus. It was Emperor Menilik II, who later changed and dedicated the church to the holy ark of St Mary of Zion in the 1890s.


\(^{285}\) Ergäṭä-Qal, p.8; *Yä Zway...* p.31.

\(^{286}\) Dane’él, p.203; Ergäṭä-Qal, p.8.

\(^{287}\) *Ibid.* (Both sources); *Yä Zway...* p.31.

\(^{288}\) Dane’él, pp. 203-204; Ergäṭä-Qal, p.8; *Yä Zway...* p.31.

\(^{289}\) Dane’él, p.204.

abode at Qulebbi and dedicated it with this holy ark of Gäbre’él on 25th July 1893. The holy ark was by then discovered at the Kahenatä Sämay church of Azhägugu in Bulga being taken from its early placement at the cave in Qulebbi.

Even though they lost much of their deposit ensuring the foundation of the numerous mainland churches as discussed above, the Lake Zway churches still possess a significant number of holy arks. Below is presented the number of holy arks each of these island sacred places owns:

<table>
<thead>
<tr>
<th>Name of the island church</th>
<th>Number of holy arks possessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gälila Kahenatä Sämay</td>
<td>4</td>
</tr>
<tr>
<td>Däbrä Sina Dengel Mareyam</td>
<td>14</td>
</tr>
<tr>
<td>Däbrä Şeyon Qepest Mareyam</td>
<td>18</td>
</tr>
<tr>
<td>Fundurro Arba’etu Ensesa</td>
<td>2</td>
</tr>
<tr>
<td>Ţädéča Abreham</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48</strong></td>
</tr>
</tbody>
</table>

From the eighteen holy arks found at the main repository of the Şeyon Mareyam church of Däbrä Şeyon, two of them are new. They are endowed by the present Archbishop, Abunä Natna’él.

1.2. Manuscripts

Like the numerous holy arks, a number of the rare manuscripts of the Ethiopian Orthodox Church also trace their discoveries to the Lake Zway churches and monastery. On his investigation of the treasures of these island churches of Lake Zway in the late 19th century, Emperor Menilik II found an
important book proving the unity of the two natures: divine and human in the person of Jesus Christ, the principle of Täwahedo (“Union”). As the chronicler, Gäbrä-Sellassé, remarks, therefore, the news of the discovery of this book was heard to the four horizons of the country thereby forcing a large number of the Sost Ledät / Yä Şäga Lej (“Three Births”/“Son of Grace”) believers and those of Qebat (“Unction”) to get re-baptized in their original faith of Huläit Ledäit (“Two Births”), more commonly, Täwahedo.

The more recently discovered rare manuscripts of the Lake Zway churches are the two Ge’ez letters of Queen Eléni and Emperor Lebnä Dengel. The letter of Eléni was sent to King Dom Manoel I of Portugal in 1509, following the increasing pressure of the lowland Muslim forces, under an ambassador named Mathew. While the letter of Lebnä Dengel was sent to King Dom John III of the same European country, Portugal, in 1534/35, following the large scale war of the Adal leader, Imam Ahmäd ibn Ibrahim, under an ambassador named John Bermudes. The central theme of both letters was, therefore, requesting military support against these expanding lowland Muslim forces.

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300 This was the religious principle arguing that the birth of Jesus Christ was thrice as its name indicates: eternal birth from the Father, genetic birth from the Virgin Mary and birth from the Holy Ghost while getting baptized in the River Jordan. It is because it believed that Jesus Christ became the son of Grace when he got birth from the Holy Ghost in the River Jordan that the religious principle was alternatively called Yä Şäga Lej. Aba Gorgoreyos, pp. 90-91; Sergew, “The Period…..” p.32.

301 This was the other religions principle which argued that Jesus Christ became God the Son in the womb of the Virgin Mary by “Unction”. Aba Gorgoreyos, p. 91; Sergew, “The Period. . .” p.32.

302 This is the governing creed of the EOC underlining that the birth of Jesus Christ is twice: eternal birth from the Father without having mother before the creation of the World and genetic birth from the Virgin Mary without having father after the creation of the World. Aba Gorgoreyos, pp. 87-92; Sergew, “The Period…” p.32; V.C. Samuel, “The Faith of the Church,” The Church of Ethiopia: A Panorama of History and Spiritual Life (Addis Ababa: Berhanena Selam Printing Enterprise, 1997) pp.43-51.

303 Gäbrä-Sellassé, p.203.


306 Pankhurst, An Introduction to….., p.74.

These two Ge’ez letters were presented by Sergew at the Fourth International Conference of the Ethiopian Studies held in Rome from 10 to 15 April 1972\textsuperscript{308} and as Sergew notes, he found these letters from the Qēsē-Gābēz (Head of Priests) of the Aksum Šeyon church, Tāklā–Haymanot Wāldā-Kidan, from whom he similarly collected those Ge’ez manuscripts dealing with the exile of the Holy Ark of the Covenant in the same Lake islands. The Qēsē-Gābēz acquired the two Ge’ez letters from the Šeyon Mareyam church of the Lake Zway monastery of Dābrā Šeyon under the permission of the then Archbishop, Abunā Luqas II.\textsuperscript{309}

Fragments of one or more old gospel manuscripts brought from the same Lake Zway churches (from the Kahenatā Sāmay church of Gālila as Henze argues) were also deposited in the Institute of Ethiopian Studies at Addis Ababa in the 1950s.\textsuperscript{310}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{image1.png}
\caption{Illustration from one of the Lake Zway gospel fragments deposited in the Institute of Ethiopian Studies with the identification number of MS IES 2475}
\end{figure}

Remaining from the enormous takings a very few of which are discussed above, the Lake Zway churches currently possess about 45 bound manuscripts 42 of which are found at the Šeyon Mareyam church of the monastery of Dābrā Šeyon. Two of the rest three bound manuscripts are found at the Dābrā Sina Dengel Mareyam church and they are, like the above fragmented manuscripts, Wāngēls (Gospels).\textsuperscript{311} While the last one manuscript is found at Ţādēča Abreham church and it is Māşehafā Genzāt (Book for the Dead’s Prayer).\textsuperscript{312}

\begin{flushright}
\textsuperscript{308} Sergew, “The Ge’ez …” pp. 547-566; \textit{Yā Zway}... p.33; Ergätä-Qal, p.22.
\textsuperscript{309} Sergew, “The Ge’ez …” p.565.
\textsuperscript{310} Henze, “Lake Zway: Southern …” p.37.
\textsuperscript{311} Informants: Tāsfaxé Nābi and Zāwgā.
\textsuperscript{312} Informants: K/Mareyam and Kāfāni.
\end{flushright}
The list of those 42 manuscripts found at the Şeyon Mareyam church of Däbrä Şeyon is the following:  

<table>
<thead>
<tr>
<th>Name of the manuscript</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gädlä Qedusan</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Orit</td>
<td>1</td>
</tr>
<tr>
<td>Arba’etu Wängél</td>
<td>4</td>
</tr>
<tr>
<td>Maşehafä Qedasé</td>
<td>2</td>
</tr>
<tr>
<td>Yä Luqas ena Yä Yohannes Wängél</td>
<td>1</td>
</tr>
<tr>
<td>Dersan Zäkämä Täräkbä Eşä-Mäsqül</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Nägäst</td>
<td>1</td>
</tr>
<tr>
<td>Şälotä Eţăn</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Arganon</td>
<td>1</td>
</tr>
<tr>
<td>Gädlä Kaléb</td>
<td>1</td>
</tr>
<tr>
<td>Astäwaşévotä Qalä Pawulos</td>
<td>1</td>
</tr>
<tr>
<td>Wudasé Amlak</td>
<td>1</td>
</tr>
<tr>
<td>Şäyfa Sellassé</td>
<td>1</td>
</tr>
<tr>
<td>Tä’amer zä Mahelêtä Egzi’abher</td>
<td>1</td>
</tr>
<tr>
<td>Yä Zäwärter Şälot</td>
<td>1</td>
</tr>
<tr>
<td>Ra’eyä Yohannes</td>
<td>1</td>
</tr>
<tr>
<td>A’emadä Meštir</td>
<td>2</td>
</tr>
<tr>
<td>Maşehafä Sä’atat</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Iyob wä Matusala</td>
<td>1</td>
</tr>
<tr>
<td>Maşehiraf Dawit</td>
<td>3</td>
</tr>
<tr>
<td>Maşehafä Me’erat</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Mänäkosat</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Retu’a Haymanot</td>
<td>1</td>
</tr>
<tr>
<td>Menbab Zäwärha Şom</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Genzät</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Krestena</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Tä’amerä Mareyam</td>
<td>1</td>
</tr>
<tr>
<td>Gädlä Hawareyat</td>
<td>1</td>
</tr>
<tr>
<td>Gädlä Abunä Górima</td>
<td>1</td>
</tr>
<tr>
<td>Gädlä Samu’él</td>
<td>1</td>
</tr>
<tr>
<td>Gebrä Hemamat</td>
<td>1</td>
</tr>
<tr>
<td>Golegota</td>
<td>1</td>
</tr>
<tr>
<td>Yä Amätu Senkesar</td>
<td>1</td>
</tr>
<tr>
<td>Şomä Degwa</td>
<td>1</td>
</tr>
<tr>
<td>Maşehafä Qēdār</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42</strong></td>
</tr>
</tbody>
</table>

313 “Yä Zway Däbrä Şeyon Qedest Mareyam Gādam tarikawi qersaqlers ena…” (Archive in the hand of the present Qēsā –Gābūz, Mämeré Mälaku).
The manuscript was taken to Addis Ababa to be exhibited to Queen Elizabeth II of England on the occasion of her visit of Ethiopia in 1965. It was also taken to Lagos, Nigeria, in 1979/80 to be displayed on the festival of African art and ranking first in the art contest due to its best quality and long age of existence, it won golden cup for its owning country, Ethiopia. It was taken thirdly in 1984 to be shown at the National Library in Addis Ababa during the celebration of the 10th anniversary of the Ethiopian Revolution.

Fig. 1.2. The beginning section of each hagiography in Gädlä Qedusan

The other important manuscript to be noticed from the above list is Gädlä Kaléb (Hagiography of Kaléb). It is the hagiography of King Kaléb of Aksum, who spent the last twelve years of his age leading the ascetic life in the monastery of Aba Pántäléwon to the northeast of Aksum. The manuscript enshrines the mighty naval expedition of this devoted Christian king to South Arabia.

315 Yä Zway… p.32; Ergätä-Qal, p.22; Informants: Banté, Málałaku, G/Mäsqil, Zärihun and Tälafinos.
318 Sergew, Ancient and … p. 143; Aba Gorgoreyos, p.27.
when the Christian people of the country suffered persecution from their Jew government. The manuscript is, in general, in the category of the most rare ones like the Gädlä Qedusan. 319

No matter how it is not mentioned in the above list because of its existence with a few of its original pages, Maşehafä Hénok (Book of Enoch) is the other invaluable manuscript which is peculiar to this Şeyon Mareyam church of Lake Zway. 320 It was at this island monastery that the surviving Ge’ez version of this manuscript was discovered for the first time after centuries of its disappearance in the World. 321

The Aksumite version of some of the listed manuscripts, particularly the above Gädlä Kaléb and Maşehafä Hénok, may further testify the validity of the people’s tradition of the transfer of the Holy Ark of the Covenant and other invaluable religious treasures from Aksum to this island church of Lake Zway during the destructive years of Yodit.

Maşehafä Genzäi of the above list was endowed by Empress Zäwditu on her official consecration of the island church as monastery. It is in this manuscript that the Empress enshrined the type and size of the restä-gult wealth she declared to the officially consecrated island monastery.

The other endowed manuscript in the same list is one of the two Mäşehafä Qedasés (Book of Mass). It was endowed by Mämher Haylä Mareyam, the late Abunä Pétros the martyred, during his service in the island monastery as Mämher (Administrator). 322

Almost all of the manuscripts listed got their current binding of the wooden chests by the strong effort of Abunä Luqas. While the metal made standing box in which they are kept safely now was donated by the present Archbishop, Abunä Natna’él.

1.3. Crosses

Seven oldest crosses of the Latin Patée type 323 are found in the two of the Lake churches: Däbrä Şeyon Qedest Mareyam and Täđéča Abreham. Five of the crosses are found in the former island monastery, while the remaining two are found in the latter island church. 324

All of the seven crosses are with long handles: five of them having rectangular ring and two of them being flat of the rectangular shape at their bases. All of them are also with two major cross shapes

319 Yä Zway ... p.32; Ergätä–Qal, p.22; Informants: Ibid., Abunä Natna’él.
320 Informants: Ibid.
321 Dane’él, p. 402.
322 The attached note on the same manuscript.
323 These are crosses whose arms expand outwards getting widened and extended from the arms’ intersection.
324 Informants: Ibid., only Mälaku and G/Mäsqäl, also K/Mareyam and Käfäni.
under the general Patée cross type division: four of them being with flared arms, while the remaining three being in lozenge shapes.325

Two of the flared arm Patée crosses found at the monastery of Däbrä Şeyon, nevertheless, seem Patée crosses of the early period, probably the Aksumite time. This is because their flared arms are too thin unlike the wide flared arms of the rest two similar crosses each found at the two island sacred places and this widening of the formerly thin flared arms was the new modification introduced in this Patée cross production since the late 14th century.326

![Image of Patée crosses]

Fig. 1.3. The five Patée crosses at the monastery of Däbrä Şeyon

The close similarity of the shape as well as constituting raw material of the two Patée crosses (one flared arm and the other lozenge shape) at Ţädéča Abreham with the rest three Patée crosses (one flared arm and the remaining two lozenge shape) at the monastery of Däbrä Şeyon may also be the other proof for the preceding existence of the above two thin flared arm Patée crosses of this island monastery.327 It may be because they were brought by those Amhara Christian emigrants of the 16th century, who took short term exile at the island of Ţädéča and hence, possibly shared some of the treasures they carried for safekeeping to this island’s church before their departure to Däbrä Şeyon, that the two Patée crosses of Ţädéča Abreham have become closely similar with those three Patée crosses of the monastery of Däbrä Şeyon both in their shape and raw material of which they were made up. This conclusion may, in turn, make the two slightly different flared arm Patée crosses of the island monastery remnants of those early religious treasures brought to the island together with the Holy ark of the Covenant thereby substantiating this tradition further.

325 See Fig. 1.3 and 1.4.

326 Salvo, p.53.

327 The two similar flared arm Patée crosses of the two island churches are made up of iron, while the lozenge shape crosses are made up of silver. The two thin flared arm Patée crosses of Däbrä Şeyon are, however, made up of only iron.
Two staff mounted crosses of a relatively long age are also found at the large treasury of the Şeyon Mareyam church of Däbrä Şeyon. Both of them are endowments, and one of them was endowed by a person named Şäga Sellassé in 1920/21, while the other by Empress Zäwditu in 1921/22, after her official consecration of the island church as monastery. The first cross is, furthermore, made up of bronze, while the second is of silver.

Fig. 1.4. The two Patée crosses at the church of Ţädéča Abreham

Fig. 1.5. The two staff mounted crosses each of which was endowed by Şäga Sellassé (No.1) and Empress Zäwditu (No.2) to the monastery of Däbrä Şeyon

1.4. Others

328 The engraved script on the cross.
329 Ibid.
330 Informants: Ibid., only Mälaku and G/Mäsqäl; “Ŷä Zway Däbrä Şeyon Qest Mareyam Gëdam tarikawi qersaqers ena…”
Apart from the above classified holy ark, manuscript and cross treasures, there are also treasures of various types at the great repository of the Şeyon Mareyam church of the monastery of Däbrä Şeyon. The two oldest Awds (Big dishes used to present the Holy Communion to the receivers) made up of the same raw material seeming silver are one of these treasures to be noted.\textsuperscript{331} They are believed to be among those early treasures brought to the island church by the Christian emigrants.\textsuperscript{332} It is, nevertheless, too difficult to distinguish which of these Christian emigrants - the early Aksumites of the 10\textsuperscript{th} century or the latter Amhara of the 16\textsuperscript{th} century - brought them to the island church because of the absence of sources throwing light on the issue.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{image16}
\caption{The two oldest Awds at the treasury of the monastery of Däbrä Şeyon}
\end{figure}

The other important treasures to be noted under this various type category are endowed religious goods and these include the Atronus (Book stand), Mäqwamiya (Staff) and Arwé-Bert (staff mounted cross of bishops) each of which was endowed by Empress Zäwditu,\textsuperscript{333} Mämher Haylä-Mareyam (the late Abunä Péṭros the martyred)\textsuperscript{334} and Abunä Natna’él (the present Archbishop) respectively.\textsuperscript{335} The Empress endowed the Atronus in 1918/19,\textsuperscript{336} some two years before her official consecration of the church as monastery.

\begin{flushleft}
\textsuperscript{331} Ibid.(Both sources).
\textsuperscript{332} Informants: Ibid.
\textsuperscript{333} Ibid., Banté, Zärihun and Tälafinos; The engraved script on the iron leg of the Book Stand.
\textsuperscript{334} Informants: Ibid.
\textsuperscript{335} Ibíd., Abunâ Natna’él.
\textsuperscript{336} The engraved script on the iron leg of the Book Stand.
\end{flushleft}
To conclude, being made up of largely holy arks and manuscripts, the treasures of the Lake Zway churches and monastery are significant in their number and mostly rare in their types, and their preservation in the island sacred places has helped the national church for its maintenance and expansion apart from ensuring its notable stand in the acquisition of the rare historical documents of even the continent.
Linguistics Landscape and Language Attitude: A Case Study on Jimma Town’s Linguistic Landscape Inscribers’ Attitude for Afan Oromo

By
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Abstract The purpose of this paper was to investigate Jimma town’s linguistic landscape inscribers’ attitude for Afan Oromo (Oromo Language) and its effects on Afan Oromo writings in Linguistic landscape of the town. The study was based on structured interviews and discussions made with linguistic landscape inscribers of Jimma town. To this end, it sought to find answers for two questions i.e. ‘What is Jimma town’s linguistic landscape inscribers’ attitude for Afan Oromo?’ And ‘How does the inscribers’ attitude for Afan Oromo affect Afan Oromo writings in linguistic landscape of the town?’ Thus, it was found out that most of the inscribers held negative attitude for the language because of their preconceived misconceptions. Consequently, they carelessly inscribed Afan Oromo based on other peoples’ assistances. They also did not care about the accuracy of the information they inscribed because they believed that the purpose of inscribing in Afan Oromo was to fulfill the formality of the regional government’s language policy. So, to prevent further linguistic problems that may perpetuate as a result of this sort of attitude, language awareness raising program and language trainings needs to be undertaken in Jimma town by the regional language planning body and the language community.

Keywords: Qubee, Afan Oromo, Linguistic landscape, Language attitude

Contextual Analysis of Oral Poetry

By
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Abstract This study aims to analyse oral poetry. The focal points are mainly three: the way oral poetry is produced, the purpose it does serve and the research methods employed to diagnose these. It begins with a brief commentary analysis of the study of oral poetry in general and it proceeds to a descriptive analysis of a sub-genre of Oromo Oral Poetry. The analysis part intentionally opts to concentrate on descriptive and analytic presentations of the poem chosen for the purpose. The aim is demonstrating the facts of oral poetry and portraying the characteristics of the specific genre. The typical personality, the scene, the manner and the poem are intentionally chosen. In choosing this I speculate that this analysis may help to fill a gap, that it will hint at the drawbacks of earlier approaches and perceptions, and that it might open new frontiers. I think of what the works of Ruth Finnegan could have gained from such analyses had it come before her works. In fact, this article can clearly be seen as a response to her calls: I hope ... this preliminary book … will serve to introduce others to this rich field and perhaps encourage specialist scholars to take the subject far further through detailed study of particular oral poetries in their own languages (Finnegan 1977: xii).
The Use of First Language in Developing Ideas in Second Language Writing

By

Reviewed by Tekle Ferede Metaferia

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Abstract
The role of the student’s native language (L1) in second language (L2) instruction has changed over time in significance and scope. It has also been a matter of contention among teachers. While some teachers believe that L1 plays a facilitative role in L2 learning and confidently translate their belief into classroom action, others stand contrary to this view and practice. And, a third group of teachers remain ambivalent about the role of L1 in L2 classrooms, perhaps because they feel that the research is not conclusive yet, or the peculiar characteristics of their contexts do not allow them to advocate a particular thought. This article reviews the work of Stapa and Abdul Hameed (2009), which focuses on the use of first language in developing ideas in second language writing. The review begins with a brief introduction and then moves on to analyzing the research design adopted and the arguments forwarded by these researchers.

Key Words: First language/L1, second language/L2, native language, target language
Institutional Challenges in Sustainable Development of Community Based Ecotourism around Wenchi Crater Lake, Oromia National Regional State.

By

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Abstract

Community-based ecotourism around Wenchi Crater Lake, Southwest Showa Zone of Oromia National Regional State, was formally established in 2002 with the aim to address the tripartite goals of meeting local livelihood needs, protecting the natural environment, and revitalizing community values. The objective of the research was to explore institutional challenges that may impede a sustainable development of community based ecotourism in the area. This was motivated by observation of empirical evidences that the ecotourism business has not met any of the envisioned goals. Accordingly, qualitative evidences indicate that an organizational framework to incorporate community members is already put in place. In practice, however, only three groups (‘guide group’, ‘horse group’ and ‘boat group’) are found to be functional out of the 11 community sub-groups that make up the base of the organizational structure of Wenchi Ecotourism Association, hence confining benefits in the hands of the youth and adult men, and measures taken to activate the remaining 8 sub-groups are found to be unsatisfactory. Among the major conservation strategies of the ecotourism, one was to discourage “slash-and-burn” farming on the steep slopes that surround the Crater Lake. But it could not become a substitute for the customary livelihood means. This implies a failure to offer a sustainable incentive for environmental protection. On the other hand, land offering for investment around the lake is practiced through informal land markets; property rights arrangement tends toward “open access” use; and land-use plan is absent. Despite a formal entry into a community-private partnership agreement, there is a reciprocated negative perception of the community and the private investor toward one another, leading to a “silent” dissolution of the same. And community-government partnership functions mainly at a formal reporting relationship, especially in the form of auditing and tax collection, and overall stakeholders’ cooperation and coordination is likely weak and competitive. Therefore, there is a need for actions to be taken by key stakeholders to enable the left out majority community sub-groups to become more active, functional and beneficiaries as such a measure would complement the “community-fund” conservation strategy. Whereas local government intervention would resolve problems arising out of informal land markets, a land-use plan which should be developed through community participation and institutionalization of “community-user-groups” may help better meet the environmental and economic objectives of the ecotourism business. Furthermore, a framework needs to be put in place not only to raise awareness about environment and ecotourism but also to boost the understanding of key stakeholders with regard to the benefits of cooperative schemes and partnerships. The implication for the policy maker is that there is a need to design comprehensive and mutually reinforcing national, regional and local-specific ecotourism development strategies that should be anchored in environmental laws and standards.
Parallel Session 7: Organized by College of Public Health and Medical Sciences, Jimma University

Exploratory study: Conducting research (particularly health research) ethically in Ethiopia: philosophical, cultural and social considerations

By

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Abstract

In the current globalized scientific research environment, effective and responsible research across cultures requires researchers and their institutions to conduct themselves in culturally sensitive ways. Part of the unspoken contract between researchers and society involves knowledge of and respect for cultural values and belief systems, which makes continuous communication and on-going consultation between researchers and communities essential. It is increasingly recognized that engaging the local community as a partner, rather than imposing demands, helps to build mutually beneficial research cooperation and partnerships. Moreover, research must be informed by the goal of reducing inequities in global health and achieving justice in health research and health care. According to World Health Organization there is a “10/90 gap”, i.e. roughly 10% of the world’s research resources are used for 90% of the world’s health problems. The lion’s share of resources is devoted to diseases and conditions most prevalent in developed countries. To resolve inequities in health and human development, to decrease burden of disease and for better health outcomes, research plays essential role (Oliver 2008) but research must be based on sound scientific and ethical principles, including community participation, informed consent, and shared benefits and burdens From a historical perspective, the development of ethical principles for conduct of health research was influenced by many past atrocities involving abusive or disrespectful treatment of human beings in medical research. These experiences eventually led to the development of ethical codes and regulations: the Nuremberg Code (1949); Declaration of Helsinki (1964-2000); The Belmont Report (1979); CIOMS Guidelines 1982 Rev. 2002;WHO, UNAIDS, TDR Standard Operating procedures; ICH Guidelines for Good Clinical Practice 1990; Good Clinical Practice (1996);UNESCO Universal Declaration on Bioethics and Human Rights. These documents helped raise awareness of ethical challenges in research involving human participants; the rights of research participants and the obligations of researchers; the duties of research ethics committees.

The primary goal of health research is the generation of useful knowledge about human health and illness. Ethical requirements are needed to ensure that the rights and welfare of subjects are respected while contributing to the generation of knowledge. The challenge for researchers is to take a variety of ethical and practical considerations into account in order to negotiate and find an acceptable balance between general research ethics principles and particular real-world situations. In this regard researchers should attempt to contextualize the guidelines, procedures and tools, taking into consideration the culture, tradition, values and local laws and regulations of the community without at the same time compromising universal ethical principles and standards. Research must be respectful, synergetic, and aim to benefit the
community. Each ethnic or cultural group has an identity that is to some extent unique, and the cultural identity of the community being researched may differ significantly from the cultural identity of the researcher(s) and their research, methods and objective. This study explains some of the gaps that can be created between the researcher and the researched by cultural, political, socio-economic and other differences. These gaps if not understood and treated, can hinder the responsible conduct of research. I concentrate on my home country, Ethiopia, where health research is sponsored by foreign and local institutions conducted by both Ethiopians non-Ethiopians. By identifying some of these gaps, I will suggest some ways that researchers can avoid pitfalls when conducting research with human participants in Ethiopia.

A Comparative Study of the Prevalence of Tungiasis in Jimma and Wolaita Soddo, Ethiopia

By

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Abstract

Background: Ensuring high quality health care will remain unattainable in most developing countries is due to the lack of interventions targeted at reducing the public health problems. This may be due to the lack of resources or because of neglectance. The frequent occurrence of the parasitic skin disease tungiasis is as a result of deprivation, social neglectance, and inadequate health care behavior. In this study, a combined Clinical and Social Science perspectives and methods were used to best assess and understand the issues affecting the prevalence of the neglected disease, Tungiasis in two different areas of Ethiopia, Jimma and Wolaita Soddo. The objective of this study was to assess the prevalence of tungiasis in two different areas of Ethiopia.

Methods: A community based comparative, cross sectional study was conducted in Jimma, South west Ethiopia and Wolaita sodo, Southern Ethiopia from October 2010 to October 2011. A total of 2795 subjects of eight different kebele were examined for tungiasis. Structured questionnaire was used to collect data. The data were entered in to computer, analyzed using SPSS 16 version and interpreted at 95% level of confidence.

Results: The prevalence rate was Delbo 33.65%, Bedesso 1.98%, Gola 21.72%, and Hibre kebele 29.56%. In Jimma, Almeyehumecha shows a high prevalence of 38.55, Bulbul 8.78%, Bosa addis 6.77%, and Bosa kito 5.67%.

Conclusion: There was high prevalence of tungiasis among children and elderly. Majority of the subjects of study population were using sandals not shoes. Various statistical data reveals that the study population
was below the poverty line. Lack of care by parents increases the burden of disease due to repeated and massive infection.

**Epidemiology of Onchocerciasis Among Inhabitants Close to Ivermectin Treated Area Along Colombo River, Gomma District, Jimma Zone, South Western Ethiopia**

By

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**Abstract**

Human onchocerciasis is one of the neglected tropical parasitic diseases caused by *O. volvulus* and results in devastating skin and eye disease mostly in Africa. It was targeted for elimination from most parts of Africa and America targeting both the vector and the parasite. Parasitological and epidemiological studies showed that onchocerciasis is highly endemic in Ethiopia particularly in Southwestern parts. The study was aimed to assess the epidemiology of onchocerciasis among inhabitants close to Ivermectin treated area. The study was carried out from April 23 to May 23, 2012 and by employing community based cross-sectional study design. Simple random sampling technique was employed to select the study participants for clinical and parasitological examinations. Data on sociodemographic characteristics were collected using a standardized questionnaire prepared for this purpose. All persons were examined clinically for skin signs and symptoms of onchocerciasis and two skin snips, one from each side of the gluteal fold were taken using blood lancet and sterilized razor blade, weighed by sensitive analytical balance and examined microscopically for microfilaria after 24hr incubation in physiological saline. All data were categorized, coded, entered in a data base and analyzed by using SPSS version 16.0 statistical packages. A total of 440 individuals age >15 years were examined for onchocercial skin diseases (OSD) and microfilariae (mf) of *O. volvulus*.

The overall prevalence of *O. volvulus* in the study area was 22.5% with 26.6% and 17.6%, for males and females, respectively. The overall prevalence of onchocercial skin diseases was 29.80 % and the prevalence of pruritis, palpable nodule, leopard skin and hanging groin were, 21.14 %, 3.65 %, 3.41 % and 1.60 %, respectively. The community microfilarial load 2.70 microfilarias per milligram (mg) of skin snips. Age, sex, educational status, occupation and duration of stay in the community had shown a significant association (P-value <0.05) with *O. volvulus* infection but only duration of stay in the village was the independent predictor for *O. volvulus* infection. Individuals who stayed 1-10 years in the study area were at lower risk of infection than those who stayed >60 years (OR =0.15, 95% CI, 0.035, 0.682).

The study area could be classified as mesoendemic for onchocerciasis and the observed onchocercial skin diseases might results in social stigma and reduced productivity among infected individuals. The prevalence of onchocerciasis, onchocercial skin diseases and microfilarial loads of males were higher than female counterparts (P-value <0.05. Implementation of mass drug administration and integrated vector control strategies very crucial and further wide studies assessing the epidemiology of onchocerciasis in remaining villages adjacent to intervened area will support the elimination programs.

**Keywords:** *Onchocerciasis, Microfilaria, Colombo River, Ethiopia*
IN vivo antiplasmodial activities of *Echnops kebericho Mesfin* and *Zingiber officinale* against plasmodium berghei in Model mice, Jimma University

By
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Abstract
Malaria is a disease of global public health importance whose social and economic burden is a major obstacle to human development in many of the world’s poorest countries. Ecological changes and the combined effect of increasing insecticide resistance of mosquito vectors and drug resistance of malaria parasites are the main reasons of malaria persistence in the vulnerable areas of the world, mainly in sub-Saharan African and Asian countries. *Plasmodium falciparum* is remarkable for its high case fatality rate particularly in young children, and alarming development of resistance to antiplasmodial drugs. The emergence and spread of antiplasmodial drug resistance is one of the most important factors undermining malaria control programs in most of the malaria endemic world. Indeed, in the fight against malaria, development of parasite strains resistant to commonly used drugs, constitute major causes behind the re-emergence and severity of a worldwide malaria problem. This underscores the continuing need of research for new classes of antiplasmodial agents. Thus, there is a need to search for novel antiplasmodial drugs from natural products especially from medicinal plants which will be active against plasmodium species to curb-up the rapid spread of drugs resistance.

The objective of the study was to assess the in vivo anti-plasmodial activities of *Echnops kebericho Mesfin* and *Zingiber officinale* against *plasmodium berghei* in Swiss albino mice.

Plant materials were collected from West Shawa zone (Gindabarat) of Oromia Regional State which is located 200 Kilometres from Addis Ababa, Ethiopia. Plant extraction was made by Soxhlet apparatus using 70% Ethanol and antiplasmodial activities of extracts were assessed. A rodent malaria parasite, *Plasmodium berghei*, was inoculated into Swiss albino mice. The mice were infected with 1x10⁷ parasites intraperitoneally. The oral acute toxicity studies were done for *E. Kebericho Mesfin.* Extracts for both plants (250,500 and 1000mg/kg) were administered by an intra-gastric tube (oral gavage) daily for four days starting from the day of parasite inoculation for antiplasmodial activity evaluations up to four days. The control groups received the same amount of solvent (3% Tween 80) used to suspend each dose of the herbal drug. Chloroquine(10mg/kg) was used as a standard antiplasmodial drug and was administered through the same route as the extracts.

Extract of *E.kebericho Mesfin* revealed no obvious acute toxicities in mice up to the 2500mg/kg but showed sign of acute toxicity at 5000mg/kg. The highest parasite suppressions (49.68%) at 1000mg/kg and 34 % at 500mg/kg were obtained from the 70 % ethanol extract. *Z. officinale Roscoe* showed marginal chemo-suppression at dose level 1000mg/kg (32.83%).
The results of this study provide the first report of antiplasmodial activities of both plants. Therefore, further investigation to determine and characterize the active ingredients as of these plants is required. *In-vitro* assay for *P. falciparum* should be carried out to verify efficacy.

**Challenges to Surface Water Quality in Mid-Sized African Cities: Conclusions from Awetu-Kito Rivers in Jimma, SW Ethiopia**

**By**

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**Abstract**

Rapid urbanization and industrialization, uncontrolled population growth, indiscriminate waste discharge and poor infrastructure are problems that African cities are facing. This paper describes an exemplary case study from Jimma, SW Ethiopia.

A cross sectional study was conducted along the Awetu-Kito drainage system in Jimma town to assess the level of pollution from urban dwellers and related activities.

The outcome of the study indicates that the EPA norms for BOD and DO are not met downstream of the major industrial and institutional activities and that also the levels of orthophosphates are too high. Small scale industries contributed 50% of the pollution load while Jimma University alone contributes nearly 15%. The contribution of the residential areas is 23%.

It can be concluded that the pollution effect in Jimma town is mainly due to the growing (uncontrolled) industrial activities, and not to discharge of household wastewater. It is presumed, however, that this will change with increasing population and increasing water consumption.

Given the same trends of urbanization and population growth similar development (socio-economic) indicators and similar climatic conditions, the key findings for Jimma are transferable to other mid-sized African cities, especially those situated south of the Sahel and in the Serengeti ecosystem region like Sudan, Kenya and Tanzania.

**Keywords:** Awetu-Kito river basin, river pollution, Sub Sahel countries, Mid-sized African cities.
Assessment of the Effect of Effluent Discharge from Coffee Processing Plants on River Water Quality in South Western Ethiopia

By
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Abstract

South Western Ethiopia is a major coffee growing region with coffee refineries located along rivers. With intensification of wet coffee processing and rampant waste discharge, an increased pressure on fauna and flora of river water bodies becomes evident. This study was conducted to find out the effects and extent of effluents generated from coffee refineries on river water quality based on the physico-chemical and nutrient parameters and macro-invertebrate assemblages as biological indicators. The experiment was done using CRD with 3 replications and composite. Sampling sites were selected to represent different ecological and environmental variations within each river, in order to understand the influences of effluent discharge by coffee refineries induced stress on physical, chemical, nutrient and biological attributes of the river water quality. A total of 72 water samples were collected at 6 sampling sites (INF, EFF, UPS, ENP, DS\textsubscript{1} and DS\textsubscript{2}) in 4 rivers. The physico-chemical and nutrient parameters and biological indicators sampling was done immediately during the peak time of coffee refineries. The results were subjected to different statistical analyses to analysis of variance (ANOVA) using SAS. Results of physico-chemical and nutrient parameters and biological indicators analysis revealed that highly significant difference interaction effect among 4 rivers and 24 sites at \(p<0.01\). It was observed during the study that coffee refineries discharge their rampant waste into ambient and in rivers water bodies. The mean average abundance of UPS of all river water were dominated by pollution sensitive taxa (Ephemeroptera, Hemispheres, Trichoptera, Plecoptera and Coleoptera) while DS were dominated by pollution tolerant families (Simulidae, Chironomidae, leeches). The UPS and DS river water quality was distinctly different when described by physico-chemical and nutrient parameters and biological assemblages (species richness, diversity and abundance) indicators. From these results, it can be revealed that river water quality of DS of Limu Kosa District were adversely affected and impaired by effluents discharged from the coffee refineries as compared to UPS. The alteration in river water quality parameters were more pronounced immediately during the peak time of coffee refineries. The high AF and RRC of BOD, COD and NH\textsubscript{3}-N at DS might be a pointer to the efficiency of the river’s no aeration mechanism which was no free flow of river water. All physico-chemical and nutrient parameters were negatively and significantly correlated among all biological indicators, while DO and pH were positively significantly correlated at \(p<0.05\). This study shows that only tolerant taxa inhabit the impacted sites, especially over the peak time of coffee refineries. It was also observed at some private sites influences of effluent discharge by coffee refineries wastes dumped in river water making conditions worse than government site. Therefore, thus concluded that the investigated area of Ketalenca river water, almost all the measured physico-chemical and nutrient parameters analysis showed an increasing trend from UPS to DS it has not yet been so polluted and might not causes any health effects on aquatic ecosystem as compared to that of the Kebena and Awetu river water. The result of the present study is used as a basis for further research needs to be conducted on the...
Assessment of Ecological Quality Status of Rivers and Water Policy Scenario in Ethiopia

By

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Abstract

Uncontrolled population growth in Ethiopia result an agricultural intensification and crowded urban settlement which increased pressure on the water resource environment through time. Despite the increasing levels of pollution in many tropical African countries, little is known about the ecological status of their streams/rivers and the related policy scenarios. We investigated physiochemical and diatoms from Ethiopian rivers that are impact by agriculture and urban activities as well as forested landscapes (reference conditions). The aim of the research was to assess the performance of diatoms as an indicator of the current status of river pollution in relation to land use pattern and to appraise water sectoral policies. In this study, both physicochemical and diatom based water quality assessment were carried out in the Upper catchment of Omo Gibe and Blue Nile basins. The physicochemical and biological results revealed the presence of drastic water quality deterioration in relation to urban and agricultural land use pattern and it was more severe in the urban impacted river segments. In the urban impacted sites diatom indices were significantly lower indicating poor river ecological quality status. Based on the ordination analysis, the diatom compositions and assemblages were also found to be robust in extracting the pollution gradient for different land uses patterns and the subsequent grouping of sampling sites. Water quality deterioration in the study area is rampant since the water management framework of Ethiopia is unable to establish water quality standards and proper assessment procedures that enhance the protection and preservation of aquatic resources. Based on our review, water sectoral policy of the country mainly lacks clarity of rights and obligations of hierarchy, upstream and downstream linkage, land use planning and enforcement of regulation that needs urgent attention.

Key words: ecological quality; rivers; water policy; Ethiopia
Reducing Health Inequalities through Government Supported Community Based Health Insurance Schemes Evidence from India

By
Dr. Devi Nair
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Background: Promoting and protecting health is essential to human welfare and sustain economic development. There are many ways to promote and sustain health of the citizens. But timely access to health care is a critical issue in developing countries (WHO 2010). Equity has been considered as an important issue in health sector. Yet an inequality between the poor and the better off persists in almost all developing countries and seems more worrisome than inequalities in other spheres (James Tobin, 1970 and A. Sen, 2002). The concept behind health financing policy is towards universal coverage is that of society risk pooling (WHA 2005). The insurance can increase the availability of resources for health care and freeing up of limited public funds to be directed towards the poor people.

The central objective of this study is to generate evidence in relation to different models of community health insurance schemes in India and sharing experiences. In effect, we are trying to make a road map for future health insurance programs particularly in relation to the goals of scalability, sustainability, equity and financial risk protection measures in developing countries context.

Methods: a case study. Both primary and secondary data collected from NRHM, FMoH, health insurance implementing agencies were analyzed. Key informants interviews done.

Results: Over half century experience government schemes CGHS (3million) and ESIS (55.4 million) altogether 58.5million (about 5% of the total population) coverage only. But there is significant increase in health insurance coverage in India through Govt. Supported CBHIS for poor especially after 2007. The breadth of coverage of insurance scheme –has accelerated from about 75 million people covered (roughly about 16 million family beneficiaries) in 2007, to an estimated 302 million people in 2010, about one-fourth of the population. National average is still 25%. Three south Indian states Andhra Pradesh (87%), Tamil Nadu (62%), and Karnataka (17%) in a span of three years have covered roughly 247 million, over one-fifth of India’s population.

Conclusion: Government supported health insurance schemes are showing significant coverage in India and reducing health inequalities. But there is a long way to travel towards the achievement of Universal health coverage and financial protection to poor.

Key words: Health Inequality, CBHIS, India, Developing countries
Pooling Stool Samples: A Cost-Effective Strategy to Assess Infection Intensity of Soil-Transmitted Helminths and To Monitor Drug Efficacy?

By
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Abstract

Background: Up to date cost-effective strategies to guide health care decision makers on how to optimize control of soil-transmitted helminths (STH) and on how to detect the development of anthelmintic resistance are scarce. In the present study, we developed and evaluated a novel pooling strategy to assess intensity of STH infections and to monitor drug efficacy.

Methods/Principal Findings: Stool samples from 840 children attending 14 primary schools in Jimma, Ethiopia were pooled (pool size of 10, 20 and 60) to evaluate the infection intensity of STH. In addition, the efficacy of a single dose mebendazole (500 mg) through reduction in fecal egg counts (FECR) was evaluated in two of these schools. Both individual and pooled samples were examined with McMaster egg counting method. For each of the three STH, we found a significant positive correlation between mean fecal egg counts (FEC) of individual and FEC based on pooled samples, ranging from 0.62 to 0.98. Compared to the FEC based on individual samples, there was no significant difference in FEC, except for A. lumbricoides. For this STH, pools of 60 samples resulted in significantly higher FEC. FECR for the different number of samples pooled was comparable for all pool sizes, except for hookworms. For this parasite, pools of 10 and 60 samples provided significant higher FECR results.

Conclusion: This study highlights that pooling stool samples holds promise as a cost-effective strategy to assess intensity of STH infection on a population level and to monitor preventive chemotherapy programs. When using the McMaster egg counting method, up to 10 samples can be pooled. However, further research is required to gain more insights into the impact of pool size, sample size, detection limit of the FEC method, intensity and aggregation of infections on the validity of pooling stool samples.
Proceedings of the Fourth Annual Research Conference of Jimma University

Closing Session

Outstanding Issues in the Parallel Sessions and General Discussion

Minutes of the fourth Annual Research Conference

Closing Session

Outstanding Issues in the Parallel Sessions and General Discussion

Minutes of the closing session of the 4th Annual Research Conference, Feb. 8, 2013

Place: JUCAVM Main Hall
Time: 03:30 to 06:30 PM

Chair person: Prof. Chali Jira, Senior director for External Relation and Communication Office, Jimma University

Rappourters: Dr. Waktole Sori, Director, Grant and Consultancy Office, Jimma University
Dr. Tesfaye Refera, Director, Publication and Extension Office, Jimma University

Present: Invited participants of the conference

Agenda:

- Presentation of Outstanding Issues identified by the parallel sessions of the conference
- Identification of main points for general discussion
- General discussion
- Recommendations for future activities (related to Research and Dissemination)

1. Presentation of Outstanding Issues identified by the parallel sessions of the conference

There were seven parallel session papers/presentations in addition to the plenary session presented in the first day of the conference. The chairman invited representatives of the parallel sessions to present outstanding issues raised in each parallel session each within 10 minutes time. The representatives presented the outstanding issues identified in the parallel session according to the following order:

Parallel Session 1 (Organized by College of Business and Economics)

Presenter: Mr. Nebiyat Nigussie

Total number of papers presented: 4

Issue 1: Demographic Changes and Economic development

Issue raised: Population growth is both an opportunity and a threat as the case may be.

Issue 2: Gender- women participation in management position

Issue raised: The participation of women in decision making process is not satisfactory despite the fact that they are very good leaders and customer managers. Positive discrimination is needed. This may disappoint male and could affect productivity if it is not wisely handled

Issue 3: On entrepreneur capacity of university

Issue raised: Public universities in Ethiopia were not able to create graduates with entrepreneurial competency.
Parallel session 2 (Organized by College of Natural Sciences)
Presenter: Mr. Kassahun Melesse
In the parallel session, a total of 8 research papers were presented in three areas/disciplines (Biology, Mathematics and Chemistry)

Important issues presented
- Micropropagation of commercially important plants
- Phytochemical Screening and Antimicrobial Activities of Some Medicinal Plants
- Post-harvest Management of Fruit Spoilage Fungi
- Mathematical abstraction

Major Findings
- Micropropagation as a promising alternative for propagation of Endod
- Potential Antimicrobial Phytochemicals isolated from Medicinal Plants
- Spice extracts showed significant inhibition of fruit spoilage fungi
- New Research dimension revealed in pure Mathematics
- Challenges on Mathematics Education identified that calls for immediate intervention

Parallel session 3 (Organized by Institute of Education and Professional Development Studies)
Presenter: Dr. Mitiku Bekele
The papers presented in the parallel session were focused on:
- Quality Assurance Practices
- Teacher Trainees Attitude Towards Teaching Profession
- Assessment of BPR Implementation: Implication for Quality Education
- Utilization of Supervision Feedback
- Child Labor and Access to Education
- Perception of Effective Leadership Behavior
- Modifying Disruptive Behavior

Out Standing Issues
- Quality Assurance Practices
- Management of Student Behavior in Public Universities
- Teacher Education
  - Attitude towards the teaching profession
- Educational Leadership
  - Perception of Effective Leadership Behavior
  - Change Management (BPR)
  - Utilization of Supervisory Feedback
- Threatening Factors to Achieve EFA goals
  - Child Labor

Parallel session 4 (Organized by College of Agriculture and Veterinary Medicine)
Presenter: Mr. Solomon Tulu
Main Issues: The need for paradigm shift in research approach
• Researches should be need based, solution focused, and the findings and recommendations should be useful (specific and feasible) for stakeholders eg, farmers, merchants, processors etc;
• Multidisciplinary approaches

The 9 papers presented were systematically categorized under four main topics
a. Animal health – issue of tracking the origin of animals for abattoirs, issues related to interpretation of Surveillance results, the need to develop measurement parameters for economic loss analysis,
b. Animal Science: Issue related to on how to optimally use pesticides without affecting honey bees and other non-target insects
c. Natural resource: While exploring natural resources, on how emphasis should be given to value addition
d. Climate and pathogen: Issues raised were looking for the opportunity of climate change along with its challenges and the use of relevant models appropriate for predictions of climate changes
e. Coffee quality – Issue on the need for comprehensive parameters and detailed data to draw on quality of coffee.

Parallel session 5 (Organized by Jimma Institute of Technology under the theme: Technology: Driver of Development)
- 15 papers were presented in this parallel session.

Main issue:
– The role of ICT to accelerate the development of the globe
– Sustainable energy engineering (wind farm, biochar, diesel production from jatropha, MHP)
– Environmental Engineering (AT to treat W&WWT, application of wastewater for urban agriculture, resource recovery from wastewater)
– Manufacturing… recycling of waste polystyrene
– Water Resources (flood hazard modeling, correlation of geological & slope formation)
– Construction materials (Geo-synthetic and selective materials)

The need for paradigm shift in research approach
• Core points raised were: Thermal efficiency of diesel engine with Jatropha -diesel blend with Biogas
• Utilization of micro-hydropower in areas far from grid line
• Conversion of waste polystyrene materials for manufacturing of complex shapes
• Development of hydrological model for flood early warning
• Searching alternative technology in water and wastewater engineering

The other main point that was raised and debated was the delayance of construction activities in Jimma, absence of construction materials. Are there alternative materials in areas with shortage of natural sand in areas like Jimma?
Parallel session 6 (Organized by College of Public Health and Medical Sciences under the theme: Health and Disease)

Main issues
- Pathogens (Tungiasis and Onchocercasis)
- The effect of discharges from coffee processing on river water quality
- Challenges to surface water quality
- Issue of Ethiopian philosophy, culture & society with respect to ethical conduct research.
- Diagnosis method improvement and
- The use of herbal medicine - Herbal medicine for malaria control (*Echinops kebricho*)

Parallel session 7 (Organized by College of Social Sciences and Law)

The main issue were
- Language: Scholarly works suggest that multilingualism enhances children’s cognitive skills, but there is little appetite for teaching local languages other than one’s mother tongue
- Gender: Despite the existence of several legal and policy instruments recognizing gender equality the practice suggests a yawning gap at various levels
  How is it possible to avoid the longstanding female dominated roles in the domestic chores?
- Culture: There is overwhelming incidence of child sexual abuse; who should do what to minimize the problem?
- Crime and Law Enforcement: Taxing crime and our legal system (Income Tax Proclamation)
- Environment: Local people’s active participation in environmental policy formulation and execution (e.g. ecotourism and forest related ones)

2. Summary issues raised (for discussion by Dr Berhanu Belay)
- The lead papers were identified by taking the core words from the theme
- Education and innovations were failed to bring change. How we can improve education and innovation to bring positive change?
- Wet land conservation and proper utilization. What could we learn to save the existing wet lands from the vanished lakes like Haramaya and others?
- Dissemination of research outputs is lagging. There is a need for inventory of the outputs, technology park and research incubation centers establishment.
- Collaboration and partnership to ensure quality of research to meet development challenges.
- How we can make the ARC vibrant and more attractive?
- Participation of researchers in the ARC is poor and how we can improve or curve the dropout?
- After the discussion points were outlined by Dr. Berhanu, the chairperson invited the participants to discuss on the issues or raise additional main issues.

3. General Discussion
Some of the points raised by participants:
Higher education institutions are expected to be the originators of new knowledge and technology. Are they really working in this regard? What are the problems of these institutions? The overall system of higher education needs evaluation. The potential users of a research output should contribute/fund to the research projects as they will ultimately use the outputs. Stronger university-industry link need to be created between the higher education institutions and potential users for dissemination of the available technologies.

There is a need to decrease organic load leading for drying of the existing lakes, to implement remediation measures, creation of nature reserves, rehabilitation of the drainages, environmental law/ policy development (or replacement), community engagement, continuous monitoring are some of the issues to be in place to save Ethiopian wetlands. The issue of establishing a Natural Reserve was raised and a technical group needs to be assigned to work on rehabilitation (a case in point is Boye lake).

There is defined policy for conservation of natural resources. That is only Free Access Law. But regulatory laws need to be formulated. There is also demand to replace the Free Access Law with a Systematic Controlled Access Law.

Integrated watershed management system has been developed and has helped to save some areas from erosion and sedimentation.

Community should have been involved when environment related policies are formulated. Stakeholders of the wet lands should come together and work out how to save the wet lands.

Researchers should approach the society to disseminate the outputs using local languages, fliers, broachers. The researchers should capture the evidences to be confident.

Emphasis for applied research

One of the basic problems of the society is shortage of construction materials. In the ARC, there should be display innovations made by students and researchers in alternative construction materials, demonstration of good works. The university should strive to find new technologies for production of alternative construction materials. The ministry of Urban and Construction wants to work with Jimma University in this regard.

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**Ideas raised to improve the Annual research conference of Jimma University**

- The ARC has to be for the wider scientific community to avoid inbreeding.
- There is a need for paradigm shift to make this ARC more sustainable, improve the environmental degradation, disseminate outputs, and increase the expansion of research, fund attraction, partnering with other stakeholders, to make papers more interdisciplinary and trans-disciplinary.
- Time given for plenary paper presentation was very short
- Publication and free distribution of the proceedings
- Participation of students, farmers, and other stakeholders
- Papers presented on such conference need to be peer reviewed
- Award should be given to outstanding presenters
- College based presentation
- Internationalization of ARC by attracting people from abroad and partnering it with mega projects. Supervisors coming from abroad can collaborate if arrangement is made.
- Many of the presentations were less interdisciplinary. There must be an attempt to do it intra-disciplinary or interdisciplinary.
- Invite stakeholders even if they do not understand English
- Presentation skills of some of the presenters should be improved. The art of presentation should be trained to improve the quality of their papers.
- The refined recommendations of the conference should be communicated to the society in local language
- The organization of the ARC could be based on participants type like: Juniors, Students, seniors and best presenter from each type should be awarded.
- To strengthen interdisciplinary research, colleges need to know one another. One option could be if one college present in this year ARC, the other college will present in the next year ARC.

4. **Recommendations for future activities (related to Research and Dissemination)**

   The recommendations and ways forward as summarized by Dr. Berhanu Belay

   - The comments that were forwarded to improve and strengthen the ARC will be taken in the coming ARCs.
   - The university has identified eight thematic areas. The research in Jimma University will be based on thematic research area and the experience from Addis Ababa University will be utilized.
   - Dissemination strategies will be strengthened
   - We will do inventory of technologies we have from the publications shelved and try to communicate the end users.
   - To improve the capacity of the staff different modular trainings was given and will be given.

With these deliberations, the Fourth Annual Research Conference of Jimma University was concluded after closing speech made by Mr. Kora Tushune, v/president for Adminstration and Development.
Closing Speech

By
Mr. Kora Tushune
V/president for Administration and Development, Jimma University

HE Dr. Adugna Wakjira, Deputy Director- General of Ethiopia Institute of Agricultural Research and member of Jimma University Governing Board.

Esteemed Participants

Colleagues

Ladies and Gentleman

First of all, allow me to express my feelings of honor and privilege to make this closing remark on the Fourth Annual Research Conference of Jimma University.

In the emerging global knowledge economy research plays a crucial role in knowledge creation, stimulation of innovations and transfer of technology. In fact, competitiveness of countries has started to depend, among other things, on how countries integrate into global knowledge stream and how they invest in education and research.
In successful universities research has a synergetic effect of expanding the frontiers of knowledge, enhancing the quality teaching and learning and providing solutions to societal problems.

In many developing countries including Ethiopia, higher education institutions (HEIs) are not harnessing these potentials of research due to a number of challenges. The usual culprits blamed for poor research outputs are discouraging institutional environment, poor infrastructure, shortage of qualified human resources, lack of research culture and skill, heavy teaching load and inadequate funding. But I would like to add to this list lack of entrepreneurial thinking and limited efforts to forge collaboration and partnership as a means of mobilizing additional resources for research activities.

It is the realization of these challenges that has prompted Jimma University to reconsider and fundamentally reform its business of research. The incompatibility of its aspiration to become a research-driven university and the prevailing reality on the ground has focused the University to critically reexamine its research policy and strategies. The traditional fragmented approach to research that had no impact on institutional and societal problems has to give ways to thematic approach that geared towards better impact. The university can no longer set research agenda behind closed door in isolation, stakeholders should be partners in identification, conducting and implementation phases of research. It has also realized that conventional disciplinary approach to research is not helpful in addressing complex and multidimensional problems in the society. Time has now come for research teams to work across disciplinary walls to effectively address societal problems. And working in collaboration and partnership is way forward in globalized world where everything else.

Standing where we are today and anticipating the next annual research conference we all realize that there are rooms for improvement. Nevertheless, this Conference has contributed to the momentum of institutional research reforms, and I strongly believe that the deliberations and conclusions of this conference have tried to address the theme selected for this conference: Meeting National Development through Science, Technology and Innovations. The Growth and Transformation Plan (GTP) that is believed to enable the country to attain a status middle income country has set aside indispensable roles for the higher education sector in general and universities in particular. Universities should play a significant role in seeking solutions to socioeconomic challenges of the country; they should engage in development and extension of knowledge economy. Jimma University should play an outstanding role in responding to this national call. Therefore, the theme of this conference pretty well resonates with the national policy of the country in terms of both timing and scope.

As I conclude this closing remark, I would like you to reflect on the long way we have come as an institution and remarkable research works that have been presented during the last two days both at the plenary and parallel sessions. This is quite an achievement and there is a good reason to be optimistic about the future of higher education in this country. There is also a good reason to believe Jimma University is a rising star.

However, I would also like to draw your attention to a compelling reality of research in Ethiopian higher education. I would like to leave you with open questions that you would ponder but do not have to answer them right now. Have our researches been useful? Have we touched the life of our people through our researches? Specifically, are we informing policy making? Are we influencing practices? Are we changing lives and livelihoods? and so on. This is an external view of our research endeavors. Similarly we can pose questions from internal perspective: do we have the right
organization and management, the right infrastructure, the right policy and strategy, and the right human resources to promote and ensure quality and relevance of our research activities?

**Excellencies, Ladies and gentleman!**

These and related questions are being asked in Jimma University. We are willing to face these questions and do what it takes to answer them. I strongly believe sister institutions who have participated in this conference had their share of the lessons to strengthen research in their respective institutions, and collaborators have also picked home-take assignments to strengthen collaboration with HEIs in an spirit of partnership for a mutual benefit and sustainable impact.

Finally, in the name of Jimma University. I would like to thank all those who came for this conference especially out true friends and allies who travelled all the way to Jimma to a part of this important conference. Allow me also to express my heartfelt appreciation to the speakers, moderators and rapporteurs of this conference who generously devoted their time to ensure the smooth running of the sessions. Ladies and gentlemen, conference of this scale is not to organize. Please allow me to thank the organizing team that has taken care of everything necessary to successfully conduct this conference including the secretarial and communications services, scheduling, logistics, accommodation, venue set-up and documentation activities. Please join me in big hands to acknowledge the contribution of this team and honor all participants of this conference.

Hoping that you enjoyed your stay in Jimma and the deliberations of the Conference, with this brief remark, I now declare that this conference has come to an end. We hope to meet you again for the fifth ARC.

I thank you for your attention!
Annex

Conference Program

Plenary Session
Day 1: February 7, 2013 General-opening Session

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities</th>
<th>Speaker</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-8:30</td>
<td>Registration</td>
<td>All participants</td>
<td></td>
</tr>
<tr>
<td>8:45-8:50</td>
<td>Introduction to the Conference Program</td>
<td>Mr. Mezemir Seifu, Director for Public Relation and Communication (JU)</td>
<td></td>
</tr>
<tr>
<td>8:50-9:00</td>
<td>Well-come Speech</td>
<td>Dr. Berhanu Belay (Senior Director for Research, CBE and PGS of Jimma University)</td>
<td>JUCAVM Main Conference Hall</td>
</tr>
<tr>
<td>9:00-9:10</td>
<td>Opening Remarks</td>
<td>Dr. Fikre Lemessa (President of Jimma)</td>
<td></td>
</tr>
<tr>
<td>9:10-9:20</td>
<td>Key note address</td>
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</tbody>
</table>

Lead Papers Presentation Session

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:20–9:40</td>
<td>Educational Innovation Adoption Models and Successful Educational Changes: Lessons for Educational Change Practices in Ethiopia</td>
<td>Dr. Dawit Mekonnen</td>
<td>Chairperson Dr. Tena Shale Rapporteurs Ato Taddese Regassa and Ato Gashahun Lemessa</td>
<td>JUCAVM Main Conference Hall</td>
</tr>
<tr>
<td>9:40-10:00</td>
<td>Some Notes on How Africa May Benefit From Globalization</td>
<td>Prof. Tesema Ta’a</td>
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<tr>
<td>10:00-10:30</td>
<td>Discussion</td>
<td></td>
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<tr>
<td>10:30-10:50</td>
<td>Health break and group photograph</td>
<td>Audiovisual center, JU</td>
<td></td>
<td>Greener area</td>
</tr>
<tr>
<td>10:50-11:10</td>
<td>Application of Geosynthetics as Newfound Technology to Old Unpaved Road Problems</td>
<td>Dr. Yoseph Birru</td>
<td>Chairperson Prof. Tefera Belachew Rapporteurs Dr. Deribew Belew and Dr. Esayas Alemayehu</td>
<td>JUCAVM Main Conference Hall</td>
</tr>
<tr>
<td>11:10-11:30</td>
<td>Global Digital Revolution: What Can We Use in Health Sciences Research?</td>
<td>Dr. Bruno Levecke</td>
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<tr>
<td>11:30-11:50</td>
<td>Discussion</td>
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<tr>
<td>12:30-12:45</td>
<td>Lunch Break</td>
<td></td>
<td></td>
<td>JUCAVM Lounge</td>
</tr>
<tr>
<td>1:45-2:05</td>
<td>The Search for Biodiversity Sustainability in Ethiopian Wetlands; Lakes Haramaya, Horable Kilole and Zwa</td>
<td>Professor Brook Lemma</td>
<td>Chairperson Prof. Solomon Deneke Rapporteurs Dr. Shimelis Zewdie and Dr. Ketema Bacha</td>
<td></td>
</tr>
<tr>
<td>2:05-2:25</td>
<td>Social Accountability in the Extractive Industries: A Review of the Ethiopian Experience</td>
<td>Dr. Fenta Mandefro</td>
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<tr>
<td>2:25-3:00</td>
<td>Discussion</td>
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</tbody>
</table>
# Parallel Sessions

**Parallel Session 1: Organized by Business and Economics College, Jimma University, Day 1: February 7, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30-4:00PM</td>
<td>Demographic changes and economic development: Application of the vector error correction model (VECM) to the case of Ethiopia</td>
<td>Hassen Abda</td>
<td>Zelalam Gebretsadik (Chair Person)</td>
<td>B1-25</td>
</tr>
<tr>
<td>4:00-4:30PM</td>
<td>The impact of foreign direct investment on poverty reduction in Ethiopia</td>
<td>Megbaru Miskir</td>
<td>Tofic seraje (Rapporteur)</td>
<td></td>
</tr>
<tr>
<td>4:30-5:00PM</td>
<td>Impact of Financial Management on Profitability: The Case of Business Enterprises in Jimma Town</td>
<td>Abiy Getahun</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:00:5:30</td>
<td>Women’s involvement as an effective management tool in decision-making</td>
<td>Chalchissa Amentie</td>
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</table>

**Day 2: February 8, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-9:00AM</td>
<td>Relationship between leadership styles of Nurses’ managers and Nurses’ Job satisfaction in Jimma University Specialized Hospital</td>
<td>Nebiat Negussie</td>
<td>Rata Megersa (Chair Person)</td>
<td>B1-25</td>
</tr>
<tr>
<td>9:00-9:30 AM</td>
<td>Health check-up of commercial banks in Ethiopia by using camel framework</td>
<td>Yonas Mekonnen</td>
<td>Mekonnen Bogale (Rapporteur)</td>
<td></td>
</tr>
<tr>
<td>9:30-10:00AM</td>
<td>Internal Control Effectiveness of Public Universities in Ethiopia (A case study at Jimma University)</td>
<td>Kenenisa Lemi</td>
<td></td>
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</tr>
<tr>
<td>10:00-10:30</td>
<td>Challenges in the Presumptive Tax System and their Repercussions on mses: A Case of in Jimma Town</td>
<td>Abiy Getahun</td>
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<tr>
<td>10:30-11:00</td>
<td>Tea-brake</td>
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<tr>
<td>11:00-11:30AM</td>
<td>Investigation of higher education student’s Entrepreneurial intention in Ethiopian Universities: Technology and Business fields in focus</td>
<td>Emenet Negash</td>
<td>Muluneh Hideto (Chair person), Wendwesen Siyum</td>
<td>B1-25</td>
</tr>
</tbody>
</table>
Parallel Session 2: Organized by College of Natural Sciences, Jimma University

**Feb. 7, 2013 afternoon**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter</th>
<th>Facilitator</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 – 10:00 PM</td>
<td>In Vitro propagation of Endod var. E-44</td>
<td>Dr. Balcha abera (Biology)</td>
<td></td>
<td>B1-21/22</td>
</tr>
<tr>
<td>10:00 – 10:30 PM</td>
<td>Contribution to the Knowledge on Ethnoxic plants of south Western Ghats, Kerala, India</td>
<td>Dr. Remish (Biology)</td>
<td></td>
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</tr>
<tr>
<td>10:30 – 11:00 PM</td>
<td>Observation of Carbonyl Sulfide over Equatorial Africa</td>
<td>Milkissa Gebeyehu (Physics)</td>
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</tbody>
</table>

**Feb. 8, 2013 morning**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter</th>
<th>Facilitator</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:00 AM</td>
<td>Existence of Common fixed points for a pair of Generalized weakly Contractive maps</td>
<td>Dr. Alemayehu Geremew (Maths)</td>
<td></td>
<td>B1-21/22</td>
</tr>
<tr>
<td>9:00 - 9:30 AM</td>
<td>Ideals in Semi-Browerian algebra</td>
<td>Dr. Zelalem Teshome (Maths)</td>
<td></td>
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</tr>
<tr>
<td>9:30 – 10 AM</td>
<td>Learning Situations and Academic achievement of Maths students in JU</td>
<td>Kassahun Melesse (Maths)</td>
<td></td>
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</tr>
<tr>
<td>10:00 – 10:30 AM</td>
<td>Evaluation of Antibacterial activities of compounds isolated from Sida rhombifolia Linn</td>
<td>Sileshi Woldeyes (Chem)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>10:30 – 11:00 AM</strong></td>
<td><strong>Health break</strong></td>
<td></td>
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</tr>
<tr>
<td>11:00 –11:30 AM</td>
<td>Phytochemical investigation and In Vetro Antibacterial evaluation of root wood and root bark extracts of Moringa Stenopetala</td>
<td>Mulugeta Tessema (Chem)</td>
<td></td>
<td>B1-21/22</td>
</tr>
<tr>
<td>11:30 – 12:00 AM</td>
<td>Phytochemical investigation on sapium ellipticum, a medical tree of Africa</td>
<td>Edimealem Agidew (Chem)</td>
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<tr>
<td><strong>12:30 -</strong></td>
<td><strong>Lunch</strong></td>
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</tbody>
</table>
## Parallel Session 3: Organized by Institute of Education and Professional Development, Jimma University

### Leadership Effectiveness and Quality Assurance Practices

**Day 1: February 7, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 – 4:00 PM</td>
<td>Quality Assurance Practices: The Case at Jimma University</td>
<td>Mr. Getachew Heluf</td>
<td>Mr. Abebe Hunde</td>
<td>B2-25</td>
</tr>
<tr>
<td>4:00 – 4:30 PM</td>
<td>Students’ Misbehavior and Coping Strategies Employed in Secondary Schools</td>
<td>Mr. Ahera Hussien</td>
<td>Abbi Lemma</td>
<td></td>
</tr>
<tr>
<td>4:30 – 5:00 PM</td>
<td>Teacher trainees Attitude Towards Teaching Profession</td>
<td>Mr. Woldu Asseffa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:00 – 5:30 PM</td>
<td>Quality of Education: The Case of Jimma University</td>
<td>Mr. Tadesse Regassa</td>
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</tbody>
</table>

**Day 2: February 8, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:00 AM</td>
<td>Utilization of Supervision Feedbacks: The Case of Some Secondary Schools in Jimma Zone</td>
<td>Mr. Abbi Lemma</td>
<td>Desalegn Beyene</td>
<td>B2-25</td>
</tr>
<tr>
<td>9:00 – 9:30 AM</td>
<td>Child Labor and Accessing Education for All</td>
<td>Mr. Abunu Arega</td>
<td>Worku Fente</td>
<td></td>
</tr>
<tr>
<td>10:00-10:30AM</td>
<td>Health Break</td>
<td></td>
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</tr>
<tr>
<td>10:30 – 11:00AM</td>
<td>Academic Staffs’ Perception of Effective Leadership Behavior:</td>
<td>Mr. Tamiru Jote</td>
<td></td>
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</tr>
<tr>
<td>11:00 – 11:30</td>
<td>Suspension as a Tool Modifying Disruptive Behavior</td>
<td>Mr. Ewnetu Hailu</td>
<td></td>
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</tr>
<tr>
<td>11:30 – 12:00</td>
<td>Women Leadership and Equal Opportunity Theory and Practice at Addis Ababa University: A Curious Paradox</td>
<td>Mr. Getachew Heluf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30-2:00</td>
<td>Lunch Break</td>
<td></td>
<td></td>
<td>Staff lounge</td>
</tr>
<tr>
<td>2:00-3:00</td>
<td>Preparation for general discussion and health break</td>
<td></td>
<td></td>
<td>Team</td>
</tr>
<tr>
<td>6:30 to 8:00</td>
<td>Dinner</td>
<td></td>
<td></td>
<td>Staff lounge</td>
</tr>
</tbody>
</table>
Parallel Session 4: Organized by College of Jimma University College of Agriculture and Veterinary Medicine
**Theme:** Interdisciplinary Agricultural Researches, Technologies and Innovations for Sustainable Agricultural Production Contributing towards Food Self Sufficiency and Security

**Day 1: February 7, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 – 4:00 PM</td>
<td>Assessing the potentials of <em>Rhizoctonia solani</em>-inhibiting bacteria through mutational analysis and in vivo bioassay</td>
<td>Mr. Gezahegn Berecha</td>
<td>Dr. Girma Adugna</td>
<td>B2-26/27</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Mr. Chemeda Abdeta</td>
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<td></td>
<td>Mr. Mikiyas Ahimed</td>
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</tr>
<tr>
<td>4:00 – 4:30 PM</td>
<td>Studying the Response of Honeybees for different Types and Rates of Pesticides</td>
<td>Mr. Shiferaw Mulugeta</td>
<td></td>
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</tr>
<tr>
<td>4:30 – 5:00 PM</td>
<td>Review on the Effect of Climate Change on Plant Disease and Disease Management</td>
<td>Mr. Amsalu Abera</td>
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**Day 2: February 8, 2013**

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<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:00 AM</td>
<td>An Abattoir Survey on the Prevalence and Monetary Loss of Fasciolosis among Cattle in Jimma Town, Ethiopia</td>
<td>Dr. Mekonnen Addis</td>
<td>Prof. Abebaw Gashaw</td>
<td>B2-26/27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dr. Hailu Degefu</td>
<td>Dr. Abebe Firomsa</td>
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<td></td>
<td></td>
<td>Dr. Benti Dheressa</td>
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</tr>
<tr>
<td>9:00 – 9:30 AM</td>
<td>Seroepidemiology Of Peste Des Petits Ruminants (Ppr) In Selected Areas Of Ethiopia</td>
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<tr>
<td>9:30-10:00 AM</td>
<td>Study on the prevalence of gastrointestinal parasites in small ruminants in and around Jimma town</td>
<td>Dr. Nuraddis Ibrahim</td>
<td></td>
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</tr>
<tr>
<td>10:00–10:30 AM</td>
<td>Health Break</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10:30–11:00 AM</td>
<td>Knowledge and Attitudes of Coffee quality Among Coffee Value chain Actors in Oromiya and SNNP Regional states of Ethiopia</td>
<td>Mr. Berhanu Megerssa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00 – 11:30 AM</td>
<td>Evaluation of Botanical Herbicides against Common Weed Species of Coffee (<em>Coffea arabica</em> L.) with emphasis on <em>Bidens pilosa</em> at Jimma, Southwestern Ethiopia</td>
<td>Mr. Abera Daba</td>
<td>Dr. Debela Hunde</td>
<td>B2-26/27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mr. Adugna Eniyew</td>
<td>Mr. Yirsaw Demek</td>
<td></td>
</tr>
<tr>
<td>11:30 – 12:00 AM</td>
<td>Characterization of geological materials in the Gilgel Gibe catchment, southwestern Ethiopia: implications on soil genesis</td>
<td>Mr. Alemayehu Regassa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00 – 12:30 PM</td>
<td>Chocolate Spot Epidemics on Different Faba Bean Varieties and Characterization of Some <em>Botrytis fabae</em> Isolates Collected from Dawuro Zone, Southwest Ethiopia</td>
<td>Mr. Mesele Haile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30 – 2:00 PM</td>
<td>Lunch Break</td>
<td></td>
<td></td>
<td>Staff lounge</td>
</tr>
<tr>
<td>2:00 – 3:00 PM</td>
<td>Preparation for general discussion and health break</td>
<td></td>
<td></td>
<td>Team</td>
</tr>
<tr>
<td>6:30 to 8:00 PM</td>
<td>Dinner</td>
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<td>Staff lounge</td>
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</tbody>
</table>
**Parallel Session 5: Organized by Jimma Institute of Technology, Jimma University**

**Name of the parallel session:** *Findings on Science and Technology*

**Day 1: Feb 07, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30-3:45</td>
<td>The Utilization of I.T. in Managing the Stability of Supplied goods from Distribution down to the Consumer level</td>
<td>Joey Tamidles Ng</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:50-4:05</td>
<td>Development of Hydrological Model For Flood Early Warning</td>
<td>Sifan Abera</td>
<td>Chairperson: Dr.Ing. Esayas Alemayehu</td>
<td></td>
</tr>
<tr>
<td>4:05-4:30</td>
<td>Health Break</td>
<td></td>
<td>Reporters: Dawit Kebede and Michael Sh.</td>
<td>B1-26/27</td>
</tr>
<tr>
<td>4:30-4:45</td>
<td>Utilization of Waste Polystyrene Material in Local Foundry Technology for Manufacturing Complex Shapes</td>
<td>Mesay Alemu &amp; Getachew Shunk.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:50-5:05</td>
<td>Site specific design optimization of Horizontal Axis Wind Turbine Based on Minimum cost of Energy for Adama I Wind Farm</td>
<td>Ayalew bekele &amp; Prof. Venkata R.</td>
<td></td>
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</tbody>
</table>

**Day 2: Feb. 08, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-8:45</td>
<td>Development of Clean Burning Pyrolysis Cookstove Co-Producing Biochar For Carbon Sequestration</td>
<td>Prof. Venkata R, Balewugize Amare &amp; Dr. Berhanu Belay</td>
<td></td>
<td>B1-26/27</td>
</tr>
<tr>
<td>8:50-9:05</td>
<td>Enhancing Biogas Production From Sewage Sludge Through Anaerobic Co-Digestion With Abattoir Wastes</td>
<td>Dida Aberra</td>
<td>Chairperson: Getachew Shunk</td>
<td></td>
</tr>
<tr>
<td>9:30-9:45</td>
<td>Influence Of Geological Formation And Slope Zone On Drainage Density And Its Implications</td>
<td>D. S. Deshmukh1, Amabaye Ekubay Haiu2, Dida Aberra3, Melaku Tegene4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:50-10:05</td>
<td>Use of Waste water from Awetu River for vegetable production by taking Lettuce (Lactuca sativa L.) as a test crop in Jimma town, South west Ethiopia.</td>
<td>Zerihun Asmelash, Bishaw Deboch, Tesfaye Shimmer Amibeche Olika</td>
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<tr>
<td>10:10-10:30</td>
<td>Health Break</td>
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<tr>
<td>10:30-10:45</td>
<td>Metasearch Engines for Entomological Databases: Existing Challenges and Future Perspectives</td>
<td>L. Melita, Gopinath Ganapathy, Kaliyaperumal Karunamoorthi, Sebsibe Haillemariam</td>
<td></td>
<td>B1-26/27</td>
</tr>
<tr>
<td>11:05-11:20</td>
<td>Alternatives for areas with shortage of natural sand</td>
<td>Wendemsesha A.</td>
<td>Reporters: Sifan Abera and Taye Tolu</td>
<td>B1-26/27</td>
</tr>
<tr>
<td>11:20-12:30</td>
<td>Discussion</td>
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<tr>
<td>12:30-2:00</td>
<td>Lunch Break</td>
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<tr>
<td>2:00-3:00</td>
<td>Preparation for general discussion</td>
<td>Team</td>
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</tbody>
</table>
### Parallel Session 6: Organized by College of Social Sciences & Law, Jimma University

**Day 1: February 7, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30-3:45</td>
<td>The Overwhelming Consequences of Child Sexual Abuse on the Survivors</td>
<td>Berhanu Nigussie</td>
<td>Gashahun Lemessa and Gudina Abashula</td>
<td>B2-21/22</td>
</tr>
<tr>
<td>4:30-4:45</td>
<td>Linguistics landscape and language attitude: A case study on Jimma town’s Linguistic landscape Inscribers attitude for Afan Oromo</td>
<td>Amanuel Raga</td>
<td>Kassaye Ambaye and Chимиdị Wakuma</td>
<td>B2-21/22</td>
</tr>
</tbody>
</table>

**Day 2: February 8, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteurs</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-8:45</td>
<td>Treasures of the Lake Zway Churches and Monastery, South Ethiopia</td>
<td>Buruk Wolde-Michael</td>
<td>Tesfaye Debela and Getachew Mekonnen</td>
<td>B2-21/22</td>
</tr>
<tr>
<td>8:50-9:05</td>
<td>The use of first language in developing ideas in second language writing. A review</td>
<td>Tekle Ferede</td>
<td>Kinde Begashaw and Mtitku Mekonnen</td>
<td>B2-21/22</td>
</tr>
<tr>
<td>9:30-9:45</td>
<td>The Homologation of Domestic Arbitral Awards in Ethiopia: Refining the Law</td>
<td>Birhanu Beyene</td>
<td>Dr. Ketebew Abiyo and Gashaw Tesfa</td>
<td>B2-21/22</td>
</tr>
<tr>
<td>9:50-10:00</td>
<td>Envisaging Forests: Ethnography of People-Forest Interactions and Execution of State Policies in Horro Guduru, Northwestern Oromia</td>
<td>Dr. Lemessa Mergo</td>
<td>Tadele Assefa and Wopndafrash Genet</td>
<td>B2-21/22</td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Health Break</td>
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<tr>
<td>10:55-11:10</td>
<td>The Psychology of Learning and Assessment: a review</td>
<td>Fisseha Mikre</td>
<td>Tamirat Mengistu and Dereje Wonde</td>
<td>B2-21/22</td>
</tr>
<tr>
<td>11:35-11:50</td>
<td>A study on Gender Treatment in EFL Text Books: Grade 9 and 10 EFL Text Books in Focus</td>
<td>Dereje Assefa</td>
<td>Yenehun Birlie and Shimelis Mengistu</td>
<td>B2-21/22</td>
</tr>
<tr>
<td>12:30-2:00</td>
<td>Lunch Break</td>
<td></td>
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<td>Staff lounge</td>
</tr>
<tr>
<td>2:00-3:00</td>
<td>Preparation for general discussion and health break</td>
<td></td>
<td></td>
<td>Team</td>
</tr>
<tr>
<td>6:30 to 8:00</td>
<td>Dinner</td>
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<td>Staff lounge</td>
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</tbody>
</table>
**Parallel Session 7: Organized by College of Public Health & Medical Sciences, Jimma University**

Name of the parallel session: Health problems (Session 1&2) and Health disparities (Session 3) for development

**Day 1: February 7, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteur</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30-3:55</td>
<td>A comparative study of the prevalence of Tungiasis in Jimma and Wolaita Soddo, Ethiopia.</td>
<td>Suresh Kumar.P. Nair</td>
<td>Session 1</td>
<td>JUCAVM Main Hall</td>
</tr>
<tr>
<td>4:00-4:25</td>
<td>Epidemiology Of Onchocerciasis Among Inhabitants Close To Ivermectin Treated Area Along Colombo River, Gomma District, Jimma Zone, South Western Ethiopia</td>
<td>Daniel Dana</td>
<td></td>
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</tr>
<tr>
<td>10:30-10:55</td>
<td>IN vivo antiplasmodial activities of Echnops kebericho Mesfin and Zingibir officinalae against plasmodium berghei in Model mice, Jimma University</td>
<td>Abdissa Biruksew</td>
<td></td>
<td>JUCAVM Main Hall</td>
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</tbody>
</table>

**Day 2: February 8, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities/title of the papers</th>
<th>Presenter</th>
<th>Chairperson and Rapporteur</th>
<th>Venue</th>
</tr>
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<tbody>
<tr>
<td>8:30-8:55</td>
<td>Pooling stool samples: a cost-effective strategy to assess infection intensity of soil-transmitted helminths and to monitor drug efficacy?</td>
<td>Zeleke Mekonnen</td>
<td>Session 2</td>
<td>JUCAVM Main Hall</td>
</tr>
<tr>
<td>9:55-9:20</td>
<td>Pesticide residue analysis in common food items and consumer risk assessment of the effect of effluent discharge from coffee processing plants on river water quality in south western Ethiopia</td>
<td>Seblework Mekonen</td>
<td>Dr.Argaw, Teferi, Gemeda</td>
<td></td>
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<tr>
<td>9:20-9:45</td>
<td>Assessment of ecological quality status of rivers and water policy scenario in Ethiopia</td>
<td>Tadesse Mosissa</td>
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<tr>
<td>9:45-10:10</td>
<td>Challenges to surface water quality in mid-sized African cities: conclusions from Awetu - Kito rivers in Jimma, SW Ethiopia</td>
<td>Taffere Addis</td>
<td>Alemayehu Haddis</td>
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<td>10:10-10:30</td>
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<tr>
<td>10:30-11:00</td>
<td>Health Break</td>
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<tr>
<td>11:00-11:25</td>
<td>Reducing Health Inequalities through Government Supported Community Based Health Insurance Schemes from India</td>
<td>Dr. Devi Nair</td>
<td>Session 3</td>
<td>Staff lounge</td>
</tr>
<tr>
<td>11:25-11:45</td>
<td>Emerging Health Insurance Schemes In Ethiopia</td>
<td>Kora tushune</td>
<td>Shimelis, Negaligne, Yibeltal</td>
<td>Staff lounge</td>
</tr>
<tr>
<td>12:30-2:00</td>
<td>Lunch Break</td>
<td></td>
<td></td>
<td>Team lounge</td>
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<tr>
<td>2:00-3:00</td>
<td>Preparation for general discussion and health break</td>
<td></td>
<td></td>
<td>Staff lounge</td>
</tr>
<tr>
<td>6:30 to 8:00</td>
<td>Dinner</td>
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Closing Session

Presentation of important issues from each parallel session and General Discussion, 8th Feb. 2013

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<thead>
<tr>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>3:00-3:10</td>
<td>Parallel session 1 (BECO)</td>
<td>Coordinator</td>
<td></td>
<td>JUCAVM Main Hall</td>
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<tr>
<td>3:10-3:20</td>
<td>Parallel session 2 (CNS)</td>
<td>Coordinator</td>
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<tr>
<td>3:20-3:30</td>
<td>Parallel session 3 (IEPDS)</td>
<td>Coordinator</td>
<td></td>
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<tr>
<td>3:30-3:40</td>
<td>Parallel session 4 (JUCAVM)</td>
<td>Coordinator</td>
<td>Dr. Taye Tolemariam, Dr. Berhanu Belay, Dr. Tesfaye Rafera and Dr. Waktole Sori</td>
<td></td>
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<tr>
<td>3:40-3:50</td>
<td>Parallel session 5 (JIT)</td>
<td>Coordinator</td>
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<tr>
<td>3:50-4:00</td>
<td>Parallel session 6 (CSSL)</td>
<td>Coordinator</td>
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<tr>
<td>4:00-4:10</td>
<td>Parallel session 7 (CPHMS)</td>
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<tr>
<td>4:00-5:00</td>
<td>General discussion on outstanding issues and wrap up</td>
<td>Participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:00-5:10</td>
<td>Closing Speech</td>
<td>Ato Kora Tushune</td>
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<tr>
<td>5:10-7:00</td>
<td>Campus tour</td>
<td>Public Relation and communication office</td>
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<tr>
<td>7:00-10:00</td>
<td>ARC Dinner and Certificate award</td>
<td>Organizers</td>
<td></td>
<td>Alumni Garden</td>
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