Debre Markos University
Excellence in Quality Education, Research and Community Services

Proceedings of the Third National Research Conference

"Research for Socio-Economic Transformation"

Debre Markos
June 2013
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“Research for Socio-Economic Transformation”

Debre Markos
June 2013
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Preface

It seems over-said that research is important to the development of every nation. With this notion, therefore, every year fund releases and encouragements are made for conducting research. Especially these days, with the increasing number of higher institutions in our country, Ethiopia, the need for researching is mandatory. This is why Debre Markos University allots budget to researchers who are deemed to solve the problems of the community in particular and that of the country in general. What we lack, however, is disseminating the research findings to the stakeholders and to the community so that they could use them to improve their lives.

Debre Markos University, through its former Research and Community Service Directorate, has gone some distance in attempting to reach the target population with the research results and, thus, has published one proceeding so far. Since the University is about 7 years old, we know that one proceeding is less than enough; that was not only the problem of the University, though.

The second proceeding, containing 16 articles presented in the Second Annual Research Symposium, was supposed to be published two years ago. For more than one and a half year, the articles stayed with Amanuel Printing Press, Bahir Dar, which finally ended in failure. The delay of the publication not only hurt the beneficiaries, but it also made researchers demotivated to undergo further studies. Finally, the present Research and Publication Directorate had to make a decision: breaking the contract and giving the publication responsibility to the Addis Ababa University, with the permission of the Management Committee of Debre Markos University. As a result, taking two solid years, the proceeding is by now published.

Although earlier than the 2nd, the 3rd proceeding is also not as early as it should have been. Collecting the articles from researchers, notificatifying calls for reviews, collecting papers from reviewers, sending the reviewed articles back to the researchers, receiving the final articles from researchers and making these articles ready for publication, etc. were some of the tempting things which delayed the journey of the publication. The path could have been shorter if there were interdisciplinary reviewing committee of the articles.

However late the proceedings may be, here it is with 14 articles in four parts. The articles cover areas like education, agriculture, health and humanities. All the research findings deal with one central theme, which was the motto of the 3rd Annual Research Conference: Research for Socio-Economic Transformation.

Hoping that the 4th proceeding, containing papers presented on the 4th Annual Research Conference, will follow as early as possible, we would like to let you read and enjoy the articles in this proceeding. Finally, we also request you to send us any comments about the content, organization, and formatting of the articles herein through dmurcscp@uniail.com.
Welcoming Speech

Molla Addisu (Ph D),
Director, Research and Community Service Directorate

His Excellency Ato Yilkal Kefale,
Vice President for Academic and Research at Debre Markos University

His Excellency Ato Haileyesus Wudu,
Vice President for Administration and Student Affairs at Debre Markos University

Distinguished Guests and Conference Participants,

On behalf of Debre Markos University, it is indeed a great honor and privilege for me to cordially welcome each and every one of you to the 3rd National Research Symposium. This year’s symposium is organized after enjoying the great success in the previous years’ research symposia in which most of the outstanding papers have been published and disseminated to different stakeholders. This great effort to organize annually such a huge event is an indication of our University’s commitment for the betterment of our society and for the endeavors of science.

Dear Participants,

As you all know, to address the interwoven problems and challenges of development in our country, academic and research institutions are highly responsible to carry out demand-driven researches and to create platforms to communicate, publish and disseminate their findings. For this reason, our University has organized its 3rd National Research Conference under the broad theme “Research for Socio-Economic Transformation”. The conference theme is intended to align research efforts with the five-year growth and transformation plan of the country. This
theme has also given the opportunity to all aspects of research endeavors that point towards sustainable socio-economic growth with a transformative potential.

Consequently, submitted conference papers excelled all our expectations for the number of individuals and the representation of participant institutions as well as for the diversity of the scientific disciplines. However, due to time and budget constraints, the total number of papers accepted for oral presentation is limited. With this limitation, the conference program included more than 50 oral presentations that will give a chance for exchange of ideas and sharing experiences.

At this point, I would like to appreciate all presenters for your excellent contributions for this great event.

Dear Participants,

The objectives of this symposium are mainly to:

- build the culture of communication on research and innovation among the diverse societal segments all over the country;
- publish and disseminate outstanding research findings and technologies for end-users;
- identify novel directions for future research undertakings; and
- give the opportunity to justify the money and efforts that went into the research.

Therefore, to meet the objectives and make the symposium successful, I would like to remind all participants to involve actively on the discussions throughout the sessions.

Then, I want to express my sincere appreciation to all participants for your presence at this special event.

Finally, I would like to take this opportunity to thank those people who put their time and energy to organize and make this symposium possible. Indeed, the big share goes to Research and Community Service Directorate.

May, I then respectfully invite his Excellency Ato Yilkal Kefale, Vice President for Academic and Research, to officially open this research symposium.
Dear Researchers,

Dear Participants,

Ladies and Gentlemen,

On behalf of the University community and myself, I would like to welcome you all to the third annual research symposium of Debre Markos University.

As you all know very well, conducting research is not only the mission of higher education institutions but also an intellectual value and tradition in the higher education set up. From broader perspectives, it is mainly research that sets the foundation to transform the society in all aspects by generating, disseminating and applying knowledge and skills.

The recent research direction in our country is set to focus on problem-solving and technology transfer to speed up the socio-economic transformation of our country. The relevance of this research approach to our country is undisputable for various reasons. One reason for this is the present socio-economic status of our country. The present socio-economic status is full of challenges that need to be addressed through scientific research. Under such socio-economic environments, problem-solving research approach cannot be an alternative; it is a must.

Cognizant to the relevance of research as one of its core missions, DMU is dedicated to establish the culture of research among the academic staffs. In this regard, actions are taken to support the staffs’ engagement in research. Since the establishment of the University, the staffs have been encouraged to conduct research so as to solve socio-economic problems of our country. This research symposium is organized for the third time to create a forum for researchers to present, review and disseminate their research findings. This kind of forum is valid to improve the standard and quality of research. The forum has intellectual power to shape and reshape the essence and purpose of scientific papers. I hope the presentation of all papers would take the participants into the intellectual discourse that in turn would initiate new research agenda for further research works.
I would also like to assure participants and researchers that all papers will be published in proceedings and (will be) disseminated so that stakeholders could be beneficiaries of these research outputs.

Finally, I would like to call up on all participants to actively participate and make significant contributions to the refinement of the scientific papers. I also thank researchers and organizers for their contribution to the realization of this symposium. The symposium is officially opened!

I wish success of the symposium!

Thank you!
PART ONE: EDUCATION AND ACADEMICS

Instructors' Classroom Assessment Practices as a Function of Training Background and Teaching Experience with Particular Reference to Final Examinations: The Case of Debre Markos University

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Abstract

The purpose of the study was to analyze the classroom assessment practice of Debre Markos University instructors as a function of their training background and teaching experience with reference to final examinations. Furthermore, the study aimed at investigating the perception of teachers and students about the classroom assessment practices. The study was conducted in Debre Markos University in five colleges. The subjects of the study were 280 students and 51 instructors from five colleges. In addition to this, 65 final exam papers were collected from the respective colleges. The instruments used for the study were document analysis (i.e., exam papers) and questionnaires. The data collected were analyzed using descriptive techniques and tested through t-test and one-way ANOVA. The results suggested that there was significant difference in using or including the basic/general information of test construction principles, writing good multiple choice and short answer items between the two groups (i.e., instructors who have pedagogy and non-pedagogy background), and the results were in favor of instructors who have pedagogy background. But there was no significant difference between the two groups in the other item formats. It was also observed that significant difference was observed in including the basic information of test construction principles and writing good short answer items as a function of teaching experience. And the result of the post-hoc analysis shows that instructors who had a teaching experience of 2 years and above included the basic information of test construction principles in a better way than instructors who had a teaching experience of less than 2 years. But significant difference was not observed in the other item formats as a function of teaching experience. In addition, significant mean difference was not observed on the perception of instructors on the classroom assessment practices as a function of both training background and teaching experience. But significant difference was observed in the perception of students about the classroom assessment practice of instructors across different colleges. On the basis of the findings, conclusions were drawn and recommendations were made.

1. INTRODUCTION

Background of the Study: The Ethiopian Ministry of Education is committed to providing a high quality education for students at all levels of education (MOE, 2011). The government has made substantial efforts to widen access, ensure enrolment and improve attendance in universities in its mission to achieve millennium development goals. However, its efforts to improve the quality of education have significantly lagged behind. This is evident not only from the poor achievement levels of students, but may also be from the poor quality of assessment taking place in universities. To achieve the mission and to reach the goal, there should be quality assessment of students' academic work. Quality assessment is a very essential element in the provision of quality education. This is because assessment provides a foundation for making sound evaluative judgments about students' learning progress in particular and about the effectiveness of the whole education system in general (McMillan, 2004; USAID/BEP, 2006b).
The word “assessment” has taken on a variety of meanings within higher education. As it is defined by Martha L., Kathryn D. and Mya P. (2001) assessment is the systematic collection and analysis of information to improve student learning. As it is defined by Brookhart (1999) classroom assessment is a continual activity for teachers to improve the quality of instruction and motivate students to learn. Airasian in 2002 noted that classroom assessment is an assessment which is implemented or conducted by instructors to check the achievement of the learning outcomes and students understanding of a certain lesson, topic, course or program. Every day in every classroom, instructors assess and make decisions about instructional success and pupils learning. Airasian (2002) has defined assessment as the process of gathering, interpreting, and synthesizing information to aid decision making in the classroom. This implies that the intent of collecting assessment information by instructors is to help them make decisions about their pupils' learning, success of the ongoing instruction and the social climate of their classroom.

Teachers use various methods of assessment to determine students’ progress in learning and their academic achievement (Stiggins & Bridgeford, 1984). In the classroom, teachers usually use written test and performance assessment or authentic assessment such as observation and questioning to obtain information about students’ learning (Airasian, 2002). According to Chang (1988), most school teachers prefer to use tests and examination to evaluate students’ learning. Classroom assessment activities include constructing written test and performance assessment, grading, interpreting test score results, giving feedback on assessment results and use of test results to make decision. When using written test and performance assessment, teachers need to be aware of the strengths and weaknesses for each assessment technique so as to select an appropriate technique to assess students’ learning (Stiggins, 1992).

The purpose of gathering assessment information is thus to help teachers make decisions in the classroom; and assessment is not an end by itself, but a means to another end, namely, good decision making (Linn & Gronlund; 2005). In simple terms, good assessment information is any information that helps teachers to make accurate decisions in their classrooms. To accomplish these activities, teachers or instructors may use various techniques of assessment. From the techniques tests and exams are used most commonly in different grade levels; that is, starting from lower grade levels up to higher institutions (Angela & Cross; 1993).

Having the knowledge and skill of test development and principles of test construction is very crucial which is expected from all teachers or instructors. Before administering tests, the instructor has to prepare tests based on a table of specification. Regarding this Yalew (2006) and (ICDR, 1999) described that table of specification or test blueprint helps the teacher to ensure that only those objectives actually pursued in instruction will be measured; that each objective will receive the appropriate weight and relative emphasis in the test; that by using subdivisions based on content and behavior. Strict observance of this principle in addition to maintaining proportionality among contents and instructional objectives can help in keeping the quality of items in post test analysis (Nitto, 1983). Moreover, instructors should follow the test construction guidelines suggested by educationalists. Before deciding to construct a test/exam, one need to know what information is required, how quickly it is needed, and the likely actions that are to be taken according to the results on a test or exam (Izard, 2005). When the tests or exams are developed it should be on the bases of test construction principles. As it is mentioned by Ebel (1979) and Meherens and Lehmann (1991), there should be general or basic information and the principles of multiple choice item, true false item, matching item, short answer and
completion item and essay or work out item formats should be considered in when we develop
tests/exams.

Research concerning teacher-constructed tests has found that teachers lack understanding of
measurement (Mehrens & Lehmann, 1991). Other research has also shown that teachers lack
sufficient training in test development, fail to analyze tests, do not establish reliability or validity,
do not use a test blueprint, weight all content equally, rarely test above the basic knowledge
level, and use tests with grammatical and spelling errors (Gullickson & Ellwein, 1985).
Technically their tests are simplistic and depend upon short answer, true-false, and other easily
prepared items. Their multiple-choice items often have serious flaws—especially in distractors

The more the teacher has obtained trainings on assessment, the more likely he/she would practice
it in the classroom. Accordingly, if the training obtained is contextualized and if teachers are
committed to practice what is obtained in trainings; trained teachers have high probability to
implement assessment than untrained ones. In support of this view, Capper in Animaw (2009)
stated that teachers who are not well trained may have difficulty in using different approaches to
assessment where as teachers who received appropriate training and have time to develop
assessment would be able to develop pedagogically and technically more creative approaches.

Researchers have attempted to investigate teachers’ perceptions of assessment in many different
ways (Chester & Quilter, 1998). Chester and Quilter believed that studying teachers’ perceptions
of assessment is important in the sense that it provides an indication of how different forms of
assessment are being used or misused and what could be done to improve the situation. They
found that teachers’ perceptions of classroom assessment affected their classroom assessment
practices.

Statement of the Problem: Teachers are responsible for assessing students’ learning. All
teachers must have assessment skills to implement the assessment strategies effectively.
Teachers used various techniques in assessment even though they may not be given appropriate
training on certain aspects of classroom assessment (Marso & Pigge, 1988b). However, studies
showed that most teachers lack effective assessment knowledge and skills when evaluating
students’ academic achievement (Cizek, Fitgerald, & Rachor, 1996; McMillan, 2001). Currently,
not much is known about Ethiopian teachers’ assessment practices and assessment skills. This
study is carried out in an effort to identify teachers’ assessment practice to enable appropriate
actions be taken to enhance teachers’ assessment skills in relation to the development of final
examinations.

Gronlund (1983) stated that educational measurement and evaluation in teaching plays a great
role in fostering the process of teaching and learning. This is because; a good test can help both
the teacher and students to focus on important aspects of teaching and learning. Emphasizing on
the role of good testing to students’ study habits, Rahmlow and Woodley in Shenkute has the
following to say: “If students are tested on trivial they will study trivial; if students are tested on
valid and reliable tests related to meaningful objectives, they will strive to achieve those

Fry, Ketteridge and Marshall (2004) when strengthening the facts cited above, they have stated
that depending up on the aims of assessment policies an institution’s effective assessment will
reflect truthfully some combination of an individual’s abilities, achievement skills and potential.
According to the review of the Quality Assurance Agency for higher education in UK (QAA, 1997) classroom assessment design and practice should be effective in terms of; clarity and students' understanding of assessment criteria, promoting learning, measuring attainment of the intended learning outcomes, appropriateness to the student profile, and consistency and rigor of marking.

Empirical studies revealed that the assessment of students' learning is under researched aspect of higher education (Fry, Ketteridge & Marshall, 2004). In the Ethiopian context, although the government has introduced a new education and training policy since 1994, the issue of how learning assessment take place has not been touched in the reform (Shenkute, 1998). His study revealed that knowledge of testing is superficial and theoretical and that basic principles of testing are not well understood.

The researcher's personal observation also witnessed that in many of our universities and colleges, students complain about the test qualities of instructors and method of scoring and grading. This complain partly because, some tests of instructors are poorly constructed resulting in failure in determining student's achievement accurately and precisely. That is, the test items may be extracted from few topics or exams may be ambiguous or not clear to them. The ambiguity may arise from instructors' lack of knowledge and skill in writing proper items in terms of language, difficulty level of the item, providing clues, and other problems.

Although the classroom testing practices of newly established universities is seldom researched, the potential reasons for poor quality of testing are related to instructors training background and teaching experience. Specifically stated, nowadays in newly established universities, most of the instructors are new for teaching profession and for the teaching environment. And also they don't have the knowledge of test construction principles because most of them do not take pedagogy courses during their stay in the undergraduate level. Not only new instructors, but also the experienced instructors do not have the knowledge of item analysis and using item bank.

Therefore, the main concern of this study was to analyze instructors' classroom assessment practice and their awareness to basic test construction principles as a function of training background and teaching experience. Hence, this study tries to answer the following basic questions:

i. Is there a significant difference in instructors' awareness on test construction principles with their difference in training background and teaching experience?

ii. Does the instructors' perception about classroom assessment practices vary significantly as a function of their training background and teaching experience?

iii. Does students' perception about instructors' classroom assessment practice differ significantly across colleges?

Objectives of the Study: The general objective of the study was to analyze instructors' classroom assessment practices as a function of training background and teaching experience. The specific objectives of the study were to:

i. see whether there is a significance difference in instructors' awareness on test construction principles or not with their difference in training background and teaching experience.

ii. see whether or not the perception of instructors' classroom assessment practice significantly vary as a function of their training background and teaching experience.
iii. assess students perception about instructors classroom assessment practices across different colleges.

Significance of the Study: Shenkute (1998) described that good tests can help both the teacher and students to focus on the important aspects of teaching and learning. But, the importance of instructors’ testing practice can serve more than what he/she has stated. The information for the effectiveness of the entire education system is derived from this testing practice and hence the results of this study can help educational stakeholders to evaluate how learning is effective in higher education. Specifically stated, the university community particularly instructors and students are among the highly beneficiary groups; because the result of the study is to show instructors about what goes wrong in their assessment practice and improve the practice accordingly. The administrative body in the university is the next beneficiary in that based on the result of the study; they organize recurrent trainings for needy instructors on the issue. In addition, the results of this study instigate other researchers in the study area to study the issue further. Thus, the importance of the study is a multifaceted one.

2. RESEARCH METHODOLOGY

Design of the Study: The purpose of this study was to analyze instructors’ knowledge on classroom assessment and its practice as a function of the professional training taken in college days and teaching experience. To attain the desired objectives, the study was followed a survey design. The approach followed was quantitative in its nature.

Participants of the Study: Instructors and students enrolled in Debre Markos University (DMU) were the human participants of this study. Besides the human participants, previously administered final exam papers in the colleges in focus were included in this study as data sources.

Sampling Techniques: Instructor and student participants were selected from the target colleges using simple random sampling technique. The actual number of human participants from different departments of each college was selected on random basis. In 2010/2011 there were 1502 second (SSH, CBE, NCS and Agriculture) year and third year Technology students and 241 teachers. From this 300 students and 65 instructors were selected. But 280 students and 51 teachers were returned the questionnaires. That is, the response rate was 93% for students and 78.5% for teachers including the questionnaires which were completed correctly. In addition to this, 65 randomly selected final exam papers prepared and administered in 2010/11 by selected colleges were randomly taken from the participant colleges.

Tools and Procedures of Data Collection: Questionnaire and document analysis were employed to gather data pertinent to the study. Close ended questionnaires were administered for students who are enrolled in different department of the colleges in focus to gather data on their perception of how instructors practice classroom assessment and for teachers to know their perception about the classroom assessment they used.

Document analysis (final exam papers administered in 2010/2011) was used as a source of data to know instructors’ knowledge and skill about the basic principles of test construction and on their degree of practicing these principles when developing test items respectively. To evaluate the exam papers the researcher developed a rating scale.

Data Analysis Technique: To analyze the data both descriptive and inferential techniques were used. Descriptively, the collected data are analyzed using percentages, mean values and
deviation scores. In addition, inferential data analysis techniques namely independent t-test and ANOVA (one-way classification) are used for comparing mean differences between or among different groups considered in the study. The alpha (α) value for test of significance is set at 0.05 levels.

3. RESULTS AND DISCUSSION

This study attempted to analyze instructors' knowledge on classroom assessment as a function of the professional training taken in college days and teaching experience with particular reference to final examinations. Thus, the discussion is based on the research question raised and the results obtained.

Instructors' Background Information: From the total sample of the respondents (i.e. instructors) 68.63% of them have not taken pedagogy courses during their stay in colleges/universities. Only 31.37% of the respondents have pedagogy background. But most teachers' that is, 70.59% has taken in-service pedagogical trainings. Regarding their teaching experience, half of the respondents (50.98%) have a teaching experience less than two years in higher institutions. And 66.67% of the respondents have no teaching experience in general.

Analysis of Exam Papers Based on Test Construction Principles as a Function of Training Background and Teaching Experience

The collected final exam papers were analyzed based on test construction principles as a function of training background and teaching experience of instructors. This is to know whether there is a variation in instructors’ knowledge on test construction principles on the bases of training background and teaching experience.

The result of this study revealed that there is a statistically significant difference in including the basic information of test construction principles in the preparation of exam papers across training background. That is, teachers who have pedagogy background used the basic information’s of test construction principles than those teachers who have no pedagogy background (t(63) = 3.78; p < 0.05).

There is also significant mean difference in applying test construction principles for multiple choice, matching and short answer item formats between the two groups (i.e. Pedagogy and non-pedagogy). The t-test result was for multiple choice t(38) = 2.82, for matching t(25) = 2.35 and for short answer t(18) = 5.41; p < 0.05. But there is no significant mean difference in the application of test construction principles between instructors who have pedagogy and non-pedagogy background for the item formats true false and essay or workout. In consistent with this study, a study conducted by Goubeaud & Yan in 2004 shows that, there is a statistically significant difference between teacher from teacher education and teacher from other faculty in the use of multiple choice test item. But there no statistically significant differences among teacher educators and other groups of higher education faculty in their uses of short answer exams.

In including the basic information of test construction principles as a function of teaching experience, significant mean difference was observed (i.e., F(3, 61) = 9.97, p < 0.05). The result of multiple comparison shows that experienced teachers considered the basic information while they write tests or exams than non-experienced teachers. But there was no significant mean difference in the application of test construction principles in writing essay or work out item formats (i.e., F(3, 51) = 1.61; p > 0.05).
Table 1: Analysis of exam papers based on test construction principles as a function of training background

<table>
<thead>
<tr>
<th>Item Formats</th>
<th>Training Background</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Df</th>
<th>t-value</th>
<th>p-value</th>
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<td>Basic/General</td>
<td>Pedagogy</td>
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<td>18.96</td>
<td>2.56</td>
<td>63</td>
<td>3.78*</td>
<td>0.000</td>
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<td>Non-pedagogy</td>
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<td>4.70</td>
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<td>4.45</td>
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<td>Pedagogy</td>
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<td>18.95</td>
<td>1.90</td>
<td>38</td>
<td>2.82*</td>
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<td>Non-pedagogy</td>
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<td>1.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>40</td>
<td>18.20</td>
<td>1.83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>True False</td>
<td>Pedagogy</td>
<td>11</td>
<td>17.55</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-pedagogy</td>
<td>13</td>
<td>16.54</td>
<td>1.56</td>
<td>22</td>
<td>1.92</td>
<td>0.068</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>24</td>
<td>17.00</td>
<td>1.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matching</td>
<td>Pedagogy</td>
<td>13</td>
<td>9.15</td>
<td>2.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-pedagogy</td>
<td>14</td>
<td>7.07</td>
<td>2.16</td>
<td>25</td>
<td>2.35*</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>27</td>
<td>8.07</td>
<td>2.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Answer</td>
<td>Pedagogy</td>
<td>12</td>
<td>11.83</td>
<td>0.39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-pedagogy</td>
<td>8</td>
<td>9.00</td>
<td>1.77</td>
<td>18</td>
<td>5.41*</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>20</td>
<td>10.70</td>
<td>1.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essay/Workout</td>
<td>Pedagogy</td>
<td>15</td>
<td>7.60</td>
<td>0.91</td>
<td>53</td>
<td>0.59</td>
<td>0.560</td>
</tr>
<tr>
<td></td>
<td>Non-pedagogy</td>
<td>40</td>
<td>7.43</td>
<td>1.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>55</td>
<td>7.47</td>
<td>0.98</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = There is a significant difference, \( P < 0.05 \)

Analysis of Exam Papers Based on Test Construction Principles as a Function of Teaching Experience

Table 2: Summary of one-way ANOVA for variations of general test construction principles for all item formats across teaching experience

<table>
<thead>
<tr>
<th>Item Formats</th>
<th>Variation</th>
<th>Sum of Squares(SS)</th>
<th>df</th>
<th>Mean Squares(MS)</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Information</td>
<td>Between Group</td>
<td>412.97</td>
<td>3</td>
<td>137.66</td>
<td>9.79*</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Within Group</td>
<td>857.24</td>
<td>61</td>
<td>14.053</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1270.21</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple Choice</td>
<td>Between Group</td>
<td>15.733</td>
<td>3</td>
<td>5.244</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within Group</td>
<td>114.667</td>
<td>36</td>
<td>3.185</td>
<td>1.65</td>
<td>0.196</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>130.400</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>True False</td>
<td>Between Group</td>
<td>11.439</td>
<td>3</td>
<td>3.813</td>
<td>2.50</td>
<td>0.089</td>
</tr>
<tr>
<td></td>
<td>Within Group</td>
<td>30.561</td>
<td>20</td>
<td>1.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>42.000</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matching</td>
<td>Between Group</td>
<td>38.302</td>
<td>3</td>
<td>12.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within Group</td>
<td>123.550</td>
<td>23</td>
<td>5.372</td>
<td>2.38</td>
<td>0.096</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>161.852</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Answer</td>
<td>Between Group</td>
<td>36.764</td>
<td>3</td>
<td>12.255</td>
<td>7.71*</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>Within Group</td>
<td>25.436</td>
<td>16</td>
<td>1.590</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>62.200</td>
<td>19</td>
<td></td>
<td>1.61</td>
<td>0.199</td>
</tr>
<tr>
<td>Essay/Workout</td>
<td>Between Group</td>
<td>4.470</td>
<td>3</td>
<td>1.490</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within Group</td>
<td>47.239</td>
<td>51</td>
<td>0.926</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>51.709</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = There is significant difference, \( P < 0.05 \)
Table 3: Multiple comparison to see the variations by using Tukey Method

<table>
<thead>
<tr>
<th>Item Format</th>
<th>Teaching Experience</th>
<th>Mean Difference (A-B)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 2 years</td>
<td>2-4 year</td>
<td>-5.58*</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>4-6 year</td>
<td>-5.20*</td>
<td>0.004</td>
</tr>
<tr>
<td>Basic/General</td>
<td>2-4 years</td>
<td>-5.51*</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>4-6 years</td>
<td>0.39</td>
<td>0.997</td>
</tr>
<tr>
<td>Information</td>
<td>above 6 year</td>
<td>0.07</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>above 6 year</td>
<td>-0.31</td>
<td>0.996</td>
</tr>
</tbody>
</table>

*= There is significant difference, p < 0.05. A and B indicate the categories/levels of teaching experience.

Perception of Instructors' on Classroom Assessment as a Function of Training Background and Teaching Experience

Instructors were asked to respond for the questions which are developed by the researcher to see their perception about their classroom assessment practices. The result which is obtained from the data was discussed in two categories.

The first one was the perception of instructors' on classroom assessment practices as a function of training background. In this regard, there was no significant mean difference in the perception of instructors on classroom assessment practices across training background (i.e., t(df = 49) = 0.14; p > 0.05). This shows that those instructors who have pedagogy background and those who did not take pedagogy courses during their stay in colleges or universities have similar perception about classroom assessment, even if the mean score of pedagogy group (M = 69.31) is greater than non-pedagogy group (M = 69.00) by fraction. This study is consistent with Suswele-Banda (2005) which reported that teacher's education program did not seem to contribute much to teachers' perceptions of classroom assessment.

Table 4: Perception of instructors' on classroom assessment practice as a function of training background

<table>
<thead>
<tr>
<th>Training Background</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedagogy</td>
<td>16</td>
<td>69.31</td>
<td>6.74</td>
<td>49</td>
<td>0.14</td>
<td>0.893</td>
</tr>
<tr>
<td>Non-pedagogy</td>
<td>35</td>
<td>69.00</td>
<td>9.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The maximum possible score was 110 and the minimum was 22

The second category was the perception of instructors on classroom assessment practices as a function of teaching experience. In this regard, the result of descriptive statistics (mean value) indicates that the perception of instructors on their classroom assessment varies across different teaching experiences. The higher the mean value indicates the better perception of instructors on classroom assessment practices. That is, the mean values increases as the teaching experience increases. To see whether there is a significant mean difference between the four age groups one-way ANOVA was used and, it is indicated that there is no significant mean difference in the four categories of teaching experiences (i.e., F(3, 47) = 0.87, P > 0.05). This finding is consistent with the findings of Suswele-Banda (2005) who reported that teacher's experience did not seem to contribute much to teachers' perceptions of classroom assessment.
Table 5: Summary of one-way ANOVA for the perception of instructors’ on classroom assessment practices as a function of teaching experience

<table>
<thead>
<tr>
<th>Sources of Variation</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>153.517</td>
<td>3</td>
<td>51.172</td>
<td>0.87</td>
<td>0.465</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2777.110</td>
<td>47</td>
<td>58.087</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2930.627</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P > 0.05

Perception of Students on Instructors’ Classroom Assessment Practices

Table 6: Perception of students on instructors’ classroom assessment across colleges

<table>
<thead>
<tr>
<th>Colleges</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSH</td>
<td>61</td>
<td>79.16</td>
<td>8.72</td>
</tr>
<tr>
<td>NCS</td>
<td>41</td>
<td>79.66</td>
<td>14.69</td>
</tr>
<tr>
<td>Agriculture</td>
<td>61</td>
<td>72.43</td>
<td>11.55</td>
</tr>
<tr>
<td>CBE</td>
<td>59</td>
<td>78.54</td>
<td>11.77</td>
</tr>
<tr>
<td>Technology</td>
<td>58</td>
<td>68.19</td>
<td>15.50</td>
</tr>
<tr>
<td>Total</td>
<td>280</td>
<td>75.36</td>
<td>13.21</td>
</tr>
</tbody>
</table>

Note: The maximum possible score was 100 and the minimum was 20.

The students were asked to respond for the questions which are developed by the researcher to see their perception on instructors’ classroom assessment practices across different colleges. As the result of the descriptive statistics indicates students of the three colleges (i.e., SSH, NCS and CBE) have almost similar mean score, that is they have similar perception about the assessment practice of their instructors. The mean score value was 79.16, 79.65 and 78.54 respectively. And the perception of students about the classroom assessment practice of instructors of the two colleges (Agriculture and Technology) was less than the three. The mean score value was 72.42 and 68.19 respectively. The result of one way-ANOVA shows that there is a significant difference in the perception of students about the classroom assessment practice of instructors across different colleges (i.e., $F_{(4, 275)} = 9.20$, p < 0.05). In the post-hoc analysis (multiple comparison), the significant mean difference in perception of students about instructors classroom assessment practices was observed between SSH and Agriculture, SSH and Technology, NCS and Agriculture, NCS and Technology, CBE and Technology. This is supported by a study conducted by Javid Mussawy in 2009 in the University of Massachusetts. He observed that students’ perception of classroom assessment differ significantly across the three departments (Social science, Natural science and Language).

Table 7: Summary of one-way ANOVA for the perception of students about instructors’ classroom assessment practices across colleges

<table>
<thead>
<tr>
<th>Sources of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>5744.787</td>
<td>4</td>
<td>1436.197</td>
<td>9.20</td>
<td>0.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>42936.056</td>
<td>275</td>
<td>156.131</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>48680.843</td>
<td>279</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The maximum possible score was 100 and the minimum was 20.
4. CONCLUSIONS AND RECOMMENDATIONS

Conclusions: Based on findings, one may arrive at the following conclusions.

1. Statistically significant difference was observed in including the basic or general information of test construction principles and writing good multiple choice, matching and short answer items while constructing exam items across training background. The result was in favor of teachers who have pedagogy background. Therefore, it can be concluded that training background may have an influence in the application of test construction principles in the preparation of exam items.

2. Statistically significant mean difference was observed in including the basic information of test construction principles as a function of teaching experience. The result is in favor of experienced teachers. But there is no significant mean difference in the application of test construction principles for essay or work out item formats. From this we can understand that teaching experience has no significant effect in the application of essay test construction.

3. Statistically significant mean difference was not observed in the perception of instructors on classroom assessment practices across training background and teaching experiences. From this we can conclude that all instructors have the same perception on their classroom assessment practices.

4. Statistically significant mean difference was observed in the perception of students about the classroom assessment practice of instructors across different colleges. The difference was observed between SSH and Agriculture, SHH and Technology, NCS and Agriculture, NCS and Technology, CBE and Technology. The result was in favor of SSH, NCS and CBE.

Recommendations

- Continuous training should be given for the existing academic staff and for newly employed instructors about assessment specifically about test construction or preparation.
- Instructors should attend the trainings (i.e. pedagogical trainings) which is organized and given by the university.
- Specifically, instructors should apply or use test construction principles while they are developing tests and exams.
- Instructors should use multiple item formats to assess students understanding in a better way.

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Curriculum Issues in Higher Education Institutions and its Implications for Quality Teaching and Learning: The Case of Bahir Dar University

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Abstract

The main intent of this paper was to explore the procedures of curriculum preparation and implementation in higher education institutions (HEIs) and its implication to quality teaching and learning. The study used qualitative approach by taking Bahir Dar University (BDU) a case. Data were secured through interview, personal reflection and observation. 10 interviewees (4 teachers, 4 students and 2 related officers), who had proper and relevant information about the problem under study were identified purposively. The study found that though establishing an institution (university), program (faculty) and department were involved with more of socio-political and economic based decisions, there were endeavors about the soft-engineering (the curriculum) of the universities, faculties and departments by the responsible body for it. The courses within the department and the detail curriculum experiences (contents and learning experiences) within the course are critically important to ensure the life of the whole system of the HEIs. This is because contents and learning experiences are the last cream that are totally responsible for student’s behavioral change. Due to the assumption that HE teachers are excellent, autonomous, responsible academia, researchers with plenty of resources, detail content selections and implementations are left for them, which is a different scenario from secondary schools and below. This sort of academic freedom and autonomy serves as a shelter for some teachers to cover what they are doing in relation to their content selections and implementations which can be taken as a serious problem for the quality of the teaching learning processes of HEIs in this regard. Teachers, particularly who are novice, less committed in research and teaching, try to manage the teaching learning practices depending only with their own minimal scope without consulting more resources for content selections and implementations. Most teachers, on the other hand, have used this freedom to maximize the innovativeness and active engagement of their lesson, students, and even for them which can be taken as indicators of quality teaching and learning. In general, therefore, university teachers have to recognize that the given freedom to select detail contents and learning experiences within a course is very important to offer courses beyond the available knowledge guides in the syllabi rather than offering courses in sub-standard qualities.

Key words: curricula, higher education, teaching-learning, and contents

1. INTRODUCTION

Background of the Study: The teaching learning processes, particularly in higher education institutes, have to be with reflection, that is, monitoring, criticizing, revising and when necessary defending that which you implement and how you implement it. University education therefore is expecting not only to teach and learn effectively what currently available as guaranteed knowledge but also need to think something out of the box in order to fit for the dynamic future world. In this regard, Brockbank and McGill (2007) contended that higher education institutes work to produce transformative agents for the society who critically reflect and able to cope with a rapidly changing world. To realize this behavior in the university education, university students need to raise the why and how questions in their learning engagement. Thus, students should...
work and study in an educational system that enables them to transform their conceptual ability and their self-awareness through engaging in critical and transformative actions and the ability to ‘shuttle backwards and forwards . . . between practice and reflection’ in order to get the heart of things and/or ideas (Darwin, 2000). As the matter of these facts the boundary of university curriculum is permeable or loose. That is, with a sort of guideline (syllabus) teachers and students are left to search more detail contents and learning experiences (Toohey, 1999).

The prominent author in the field of higher education, Clark (1983:11), moreover, contended that “for as long as higher education has been formally organized, it has been a social structure for the control of advanced knowledge and technique. Its basic materials or substances are the bodies of advanced ideas and related skills that comprise much of the more esoteric culture of nations.” Clark further elucidated that the discovery of knowledge is an open-ended task and which is expected from the practices of HEIs. In addition, it is an assignment that can be treated through manipulations of the unknown and the uncertain rather than only dealing with the rationale means of attending the already known and defined ends (Clark, 1983).

Higher education is the leading part of the education system of a country by searching and identifying innovative ideas for the whole school system in the nation and then to contribute for the overall development of the nation. In support of this Teshome (2003) noted that for higher education none of its responsibilities is greater than that of contributions to the maintenance and continuous improvement of the whole education system of which it is the leading part. Higher Education Proclamation of Ethiopia initiated that higher education learners have to acquire pertinent scientific knowledge, independent thinking skills and professional values that together prepare him/her to become a competent and change agent professional (Federal Democratic Republic of Ethiopia, FDRE, 2009). Therefore, it is possible to conclude that higher education throughout the world including Ethiopia is responsible to lead the whole development aspects of the nation in general and the education system in particular through the management of the available and advanced knowledge and skills and therefore working for its innovativeness for finding the reality of the future world. Hence curricular issues in Ethiopian higher education should take in to account because, according to Taba (1962) and Tyler (1949), the curriculum is the vehicle/heart of all other activities in educational institutions because without it the objectives never realized.

University teachers, unlike secondary school and below, are responsible to select and implement detail contents and learning experiences of the course which they assign to teach. This is an opportunity for the university academia (students and teachers) to maximize their innovation power instead of dealing with highly pre-described contents and learning experiences. In this regard, Toohey (1999) stated that teachers in higher education retain a very significant advantage over the teacher in other branches of education; their control of the curriculum. In much of primary, secondary and technical and vocational education, course design has been handed over to experts; to the impoverishment of the role of classroom teacher. Yet the opportunity to involve in course design is an advantage for which many teachers in universities seems quite an aware. This is because much of the creativity and power in teaching lies in the designing of the curriculum, the choice of the texts and ideas, the planning of learning experience/opportunities for students and the means by which achievement is assessed.

Higher education in Ethiopia has condemned that it is not meet the demands of the nation. “Therefore, the curriculum has to revise certain dogmas and legacies inherited from its previous
models. In addition to its traditional role of educating, creating knowledge and developing the mind, it is increasingly asked to train, be student-centered, practice-oriented, society focused, and to teach professions that require skills and hands-on training, as well” (Teshome, 2003:7). Implies, HEIs curriculum, which mainly expects from teachers to improve, is not in a good position to equip graduates for their future occupation (Teshome, 2003). Based on such complaints continuous revisions have offered for the last 15 years ago. Still there are complaints on the graduates’ proficiency, particularly practice-based efficiency, which is assumed highly irrelevant with the jobs found at the ground (MoE, 2010a). As far as my reading is concerned, even though number of studies are dealing with the status of quantity and quality of graduates from HEIs, little (almost none) is done about the nature and procedure of its curriculum designing and implementations.

With this in mind this paper is intended to the procedures of curriculum preparation and implementation in higher education institutions (HEIs) and its implication to quality teaching and learning by taking Bahir Dar University as a case.

Statement of the Problem: Ethiopia possesses a 1,700-year tradition of elite education linked to the Orthodox Church. But secular higher education was initiated only in 1950 with the founding of the University College of Addis Ababa which followed by the establishment of some specialized technical colleges (Saint, 2004). Though the institutions hosted an educational culture that was heavily influenced by its long informal association with the Orthodox Church (Wagaw 1990, as cited in Saint, 2004), in their academic organization they were somewhat more of the American model than the British (Saint, 2004).

In 1974, a socialist military coup overthrew the monarchy of Emperor Haile Selassie and established an oppressive regime known as the ‘Derg’ (i.e., committee). Government intervention in university affairs expanded, including security surveillance, repression of dissent, mandated courses on Marxism, prohibition of student organizations, appointment of senior university officers and control of academic promotions (Saint, 2004). And he further noted the country’s education system became largely isolated from the western world and attached to the socialist camp (USSR and East Germany).

HEIs are unexpectedly expanded in the present government of Ethiopia, FDRE. According to the senior expert of higher education capacity building (one of my interviewees), till 2004 College of teacher education were considered as a sub-sector of higher education. Since 2005, however, higher education incorporates only those institutions offered bachelor degrees (with 3, 4, 5 or 6 years of study) as well as post graduate degrees (masters and PhD degree in 2 and 4 years study respectively) (MOE, 2010a; FDRE, 2009). Ethiopia has 34 government higher education institutions of which 31 are proper universities and 3 non-university HEIs (Ethiopian Civil Service College, College of Defense University College and Telecommunication and Information Technology College). And there are 64 accredited non-government HEIs. According to the educational statistics abstract, MOE (2010a), the total enrollment of HEIs in all programs (regular, evening, summer and distance) was 434,659 (of which 77,140 were enrolled in non-government higher institutions). 420,387 (96.7%) enrollments are in under graduate degree program, 1,348 enrollments are in master program and 791 enrollments are in PhD program. Higher education enrollment ratio is reached 5.6% which is nearer to the African enrollment ratio, 6% (MOE, 2010b).
In the twentieth century, towards the end of the monarchy system, and even in the beginning of the twenty first century, Ethiopia found itself with a HEI that was high state control in its management, non-flexible in its intellectual orientation, limited in its autonomy, short of experienced and well qualified academic staffs, declining in educational quality, weak in its research output and poorly connected with the intellectual international higher education community calls a reform in the system (Teshome, 2005; Saint, 2004). The reform pressures that had begun to build in the 1960s were suppressed by the Derg in the 1970s and 1980s, returned to the fore with the establishment of elected government in 1994. This time higher education reform was embraced as a critical national need by the government of the day. The current government therefore has prepared and actualized The Higher Education Proclamation (FDRE, 2003), which was the first in its kind. It was a major step to forward and show policy and strategy directions of the sector in Ethiopia. This comprehensive proclamation provides a thoughtful and forward-looking policy framework for guiding the reform towards the growth of Ethiopian higher education (Teshome, 2005).

The higher education reform by developing visions and missions tries to revise some dogmas and then to meet the established agendas of HEIs in Ethiopia. In addition to its traditional role of educating, creating knowledge and developing the mind, it is increasingly asked, for example, to train, be student-centered, practice-oriented, society focused, and to teach professions that require skills to handle actual professional tasks in the future world (Teshome, 2005). In Ethiopian HEIs most graduates were good in the theoretical knowledge but poor in skills and in the application of the knowledge they gained from the universities in to the real world of work. According to Saint (2004) and Solomon (nd), the higher education reform in Ethiopia has worked in all levels found in HEIs. At the system level, for example, increases the number of universities from 2 to 8 and then to more figures in the future, at the institution level, gives substantial autonomy to universities, at the academic program, reduces degree courses from 4 to 3 years in length. In addition to these reform attempts, the curricular aspects of Ethiopian HEIs also have got attention by the reformers (Teshome, 2003) because there were irrelevancies and scarcity of qualities. As a result MOE organizes the development of a curriculum by the respective departments and gives chances for stake holders to put their comments on it (2003).

Though there are these much efforts to improve the system of higher education still in doubt particularly with reference to its quality dimension. Different investigations realized this fact. For example, Daniel (2006:7) reported that opportunities for access for higher education have shown marked increase following the expansions of the government and private higher education institutions. On the other hand, there is equally valid and widely shared concern that the higher education expansion in the country appears primarily quantitative and there is a serious concerning quality. There are serious challenges in meeting minimum standards for quality education. Providing adequate number of qualified staff, sufficient library, classroom facilities, etc. are some of the challenges that need to be successfully addressed if quality is to be maintained.

In the Ethiopian public universities, (Ayalew et al., 2010), the teaching is more of teacher centered and the quality of the teaching learning practices are not with the expected standard. As a result, though there are various variables that affect the quality of teaching and learning, it seems crucially important to examine the structural framework of higher education curriculum and the teaching learning practices. To this end, the following research questions have been posed.
1. How the structural frameworks of higher education curricula are formulated?
2. Do teachers wisely manage and utilize the practice of content and learning experiences selections and implementations for better teaching learning activities?

Objectives of the Study: The general objective of this study was to explore the general procedures and teachers’ involvement in curriculum preparation and implementation at higher education institutions (HEIs) and its implication to quality teaching and learning in it. The followings are specific objectives of the study. The study examined:

- the structural frameworks of higher education curricula, and
- teachers management and utilization of the practices of content and learning experiences selections and implementations for better teaching learning activities.

Significances of the Study: This study is going to support the businesses of higher education academia (teachers and students) in giving hints about the selection and delivery practices of their contents and learning experiences. That is they have to take the freedom of selecting their curriculum experiences as an opportunity to maximize the teaching learning processes in general and the innovativeness of both teachers and students in particular. As a result, the study helps to show that the process of deciding and then selecting curriculum experiences are demanding tasks but very useful to make higher education teaching and learning practices to the standard. It may also help the concerned officers in HEIs (from MoE to the department/program level) to manage/support curricular issues, which in fact is their central concern, in such a way that to facilitate the main issue of the HEIs: Quality teaching and learning.

2. METHODS

The main intent of this paper is to explore the procedures of curriculum development and implementation in Ethiopian higher education institutions (HEIs) by considering Bahir Dar University as a focus. The study utilized qualitative approach with a design of case study.

Data Sources and Research Settings: Data were secured from the review of government legislations, university teachers’ interview responses and from the personal reflections of the writer of this term paper who has more years of experiences as a teaching staff of a university. Data were collected through interview, personal reflection and observation. 10 interviewees (4 teachers, 4 students and 2 related officers), who have proper and relevant information about the problem under study, have identified purposively.

Data Gathering Instruments and Procedures: Interview and observation were the main data collection instruments of the study.

Interview was applied to search information about the nature of curriculum development in the university starting from the very establishment of the university, as a system to specific facts/principles in a topic of a course. Seven interview guide items were developed and utilized to initiate the interview sessions of the study. All the interview sessions have accomplished by the researcher. When the respondents were reluctant to respond or when they divert the direction of a question, attempts were made to persuade and lead them back to the topic in order to concentrate and obtain relevant information on the issue that was raised.

Observation was conducted with some selected classroom practices. Eight classrooms have identified for observation purpose from four faculties (social science, natural science, engineering and business and economics faculties) by taking 2 classrooms from each. Moreover,
the experiences and qualifications of teachers have taken into consideration. By doing so, the classes of 2 PhD, 4 MA/MSc and 2 BA/BSc holder teachers were observed while teaching. Of the eight classroom observations, five were with high experienced teachers (more than 10 years service) and 3 were with less experienced (less than 5 years service). There were some five semi-structured observation scale items. But many observation data were included from the classroom practice though they are not indicated in the observation scale.

Though some writers are writing against the issue of validity and reliability in qualitative research, these days it becomes common to see concerns for these quality indicators (Richards, 2005). With this understanding, this study tried to collect data with variety instruments from different participants. The study attempted to check the interview data through observation and the other way round. Data from teachers were checked through students’ and experts’ data. Students’ and experts’ data in turn were proved through teachers’ data.

Data Analysis Techniques: All the data were qualitative. Therefore, the analysis followed narration of the interview as well as the observation data in line with the themes raised in the research questions.

3. RESULTS

The Structure of Higher Education Curriculum Development in Ethiopia: An educational institution, be it a university, school or any kinds of training institutes, must be with a sort of curriculum (Taba, 1962). Curriculum development/design, according to one of the teachers’ respondent, therefore is a crucial practice for educational institutions. Curriculum development encompasses all the engagements that extend from the establishment of a system (university) to plan/think a lesson for a day (explanation made by one of the curriculum related officer). As a general remark, all developing countries HEIs’ curriculum is highly influenced with the models of the Western nations’ curriculum (UK, USA and other European nations) (Lattuca, 2006). The Ethiopian HEIs’ curriculum never escapes from this reality. It is highly influenced by the US HE model (Saint, 2004).

System/Program (University, Faculty and Department) Development: Let me start to introduce how certain systems and programs of higher education emerged in Ethiopia. As it was forwarded by one of my interviewees (committee-chair in curriculum issues), Ministry of Education, with a deal to the Prime Minister Office and other concerned minister offices, has been responsible to show the needs for opening a university in certain areas of the nation. Once the idea is accepted and recognized by the concerned government bodies, the process of establishing a university, with all its physical plant and curricular matters, is accomplished by the ministry of education. In other words, according to the responses of teachers curricular issues are necessary not only in the case of course and content developments but also in the establishment of universities, faculties and departments. That is, it is mandatory to think the nature of programs/disciplines/curricula which are going to be installed in the universities, faculties and departments when the concerned body found them. For example, if ‘X’ university is established, there is a need to indicate or identify the kind of faculties/colleges that it encompasses.

The addition and reduction of programs (faculties, schools, institutions, etc.) within the university, according to university teachers’ interview and my own experience as university staff, is normally done within the scope of the university. In order to accomplish this task, the university first engages in visibility studies to see how much the program is workable for the society as well as for the prospective learners in that program. For example, I have been involved
as a member of visibility study to open Medical Science Faculty in Bahir Dar University. In our study, we have talked with ministry of health and ministry of education (to understand societal needs through them), with medical science experts (to understand the expertise interest and to know subject matters need) and with preparatory students (to see learners need to wards the prospective faculty). In addition, we identified the economic and institutional visibility from different stakeholders. By doing so if the visibility studies of the intended programs/faculties are positive, the programs will be established in the university. If not the program is not realized or opened. Though the university has major responsibility to open or close the facilities, based on the result of the visibility studies, it is mandatory to inform and get the willingness of Ministry of Education which is authorized to allocate more budgets for the faculty to be established (two university teachers’ interview).

Opening a department within a faculty/program/ as explained by one of my teacher respondents, is possible by the faculty itself. Here the faculty members are responsible to study the visibility of the department to open. Of course the university needs to acknowledge the opening of the department through its Academic Vice President and Curriculum Committee. And the university is planned to adjust the budget in accordance with the demand and need of the new department. Departments in turn have various courses in order to maintain the training to the required standards for that department. The department staffs are responsible to revise and update the nature, kinds and numbers of the courses in their department. That is, the staffs suggest possible amendments and changes to improve the nature of courses in accordance with the current scientific findings and knowledge. Then after the department reports the kinds of amendments in the courses for the faculty with justifications and the faculty in turn informs this change for the university.

The first three top components of HEIs (university, faculty and department) need more of governmental bodies’ decision than dealing with the detail appropriateness and relevancies of lesson topics in line with different criteria of standards. The concerned governmental offices (Ministry of Education, universities, faculties and departments) are discussing with the related stakeholders and deciding to open the universities, faculties and departments. These concerned governmental offices, therefore, are responsible to diagnose the needs for establishing and then for developing the visions, missions and objectives of these educational compartments (university, faculty and departments) in line with the identified needs.

Of course the question of what to teach or what kinds of disciplines are incorporated in the universities, faculties and departments should be among the top critical questions that need proper responses during establishment. In other words, MOE, in addition to other concerns related to the physical plants (buildings, furniture, and workers’ employment) needs to worry about the kinds of trainings which are going to offer in the new emerging university. And the university in turn has to think the kinds and natures of disciplines/departments that will be incorporated in each faculty. That is why it could be true to consider the establishment of a university, faculty and department as part of the curricular issues.

Courses, their Contents and Learning Experience Development: The course frameworks for the department are done with the discussions of field specialists in the department (teachers’ interview response) of course there are supports from the faculty as well as from the university. If this practice (course development) is sometimes accomplished at the nation level (in its widest scale), that is, Ministry of Education might take the responsibility to coordinate course
developments for various departments by calling expertise from different universities in the form of workshops or some other forms of forums. In this regard, Teshome (2003:8) stated that the curricula of higher education in Ethiopia, both at undergraduate and graduate programs, were in many cases judged as having large elements of irrelevance with respect to the current national and global development situations. Emphasis is given to the urgent need to revise and adapt the curricula to meet national, social, economic, cultural and geographic circumstances. Each department prepared a curriculum and this was evaluated by relevant stakeholders. Previously, each university department was copying and adapting curricula for different programs from relevant countries, adjusted as per the policy provisions (duration, practical orientation, etc.). The documents from each institution were collected and universities with similar programs were required to look into the curricula of each other and make necessary adjustments and amendments. This final document is to be used as the basic document for a given curriculum, but each university is then expected to adjust as per its situations and circumstances.

By doing so, course syllabi of various departments are prepared and sent to the respective institutions. The course syllabi mostly include some major topical descriptions and unit organizations. Next to this stage, under the guide of the syllabi, there is a need to select detail contents and learning experiences.

In another saying, curricular materials (contents and learning experiences) in the university, with the inputs from group of expertise under the auspices of Ministry of Education, are developed in the form of general guides (syllabi) by indicating general objectives and contents for the course. That means, unlike the primary and secondary schools, there is no peculiar textbook which has all the detail curriculum experiences (contents and learning experiences) and might be prepared by a group of curricular and subject specialists but out of the direct involvement of every individual teacher. Rather in the case of the university, the course teacher is responsible to select and organize the detail contents (facts, rules, principles, theories, etc) and learning experiences (class activities, exercises, examples, assignments, projects etc) which are proper and fit to the goals of the university education in general and the objectives of a given course in particular (Cullingford, 2004).

**Teachers’ Selection of Curriculum Experiences and Its Impact for the Teaching-Learning Processes**

The assumption behind the responsibility and freedom given in the university is that to facilitate both teachers and students, during their teaching learning practices, engagement in knowledge searching and construction with minimal restriction and boundary. On the way to select and implement detail scientific contents for a course, the university community, particularly teachers and students might be moved beyond what is prescribed by the respective authors in the syllabi, which contain the general objectives and lesson topics. This is really a legitimate and well accepted practice because university education is expecting to work for innovation in science and to cope with the future world (Hussey and Smith, 2010). Here in the case of selecting, organizing and implementing detail contents and learning experiences the teacher is responsible to see his/her selection and implementation in terms of the components of the objective model. This means that the teacher at least has to look about his/her students’ need (gap) for that specific topic, state possible objectives select and implement curriculum experiences parallel with the identified needs and objectives. However, one of the student interviewees makes sense that though there are many teachers who have good selection and delivery practices of curriculum
experiences, a significant number of teachers also miss utilized this opportunity by handling it in shallow manner. For example, another student says that I saw teachers that use their exercise book while they prepared at the time when they were a student.

Teacher respondents on their side forwarded that it seems difficult for less experienced and qualified teachers, however well experienced and qualified teachers are in a good position to manage the assignments of content selection and learning experiences designing. Therefore, one of the interviewees informed that if the course for example is given by two different instructors, there are totally different instructional outcomes due to the differences in the two instructors’ performance. The other worst condition is that in the name of academic freedom no one says anything about the instructional performances of teachers in the university. One teacher respondent emphasized those novice teachers; even they are graduating from the same university they teach together with their last year’s instructor, are not opening and ready to get advises from their instructors. They rather prefer to refer their incomplete lecture notes (that prepares when they were a student) in order to proceed in their HE teaching accomplishments.

The observation data of the study realizes almost a similar fact with the responses of the interview. That means, there are some teachers, particularly who are experienced, who accomplished the teaching learning processes with open and informative actions. For example, instead of strictly focusing their lecture notes without satisfactory examples, explanations and discussions, in some classes I observed explanations with some open ended tasks/activities which are almost class made. On the contrary, in some other classes the observation shows that the classroom practice is totally with fidelity perspective. That is, a matter of implementing contents and learning experiences which are designed and planned by somebody else. To the extent, in one or two classes I observed that there are worst kinds of course offerings. I heard several times from the teacher this is not the scope/issue of this course/class. But students raised the question/doubt for several times. From the context I understood that the issue is highly relevant to the course but the problem is with the course management of the instructors

4. SUMMARY

The study examined procedures of curriculum preparation and implementation in higher education institutions (HEIs) and its implication to quality teaching and learning. Data were secured through interview, personal reflection and observation. 10 interviewees (4 teachers, 4 students and 2 related officers) were participated in the study. It employed a qualitative case study approach. The study attempted to realize that the structural frameworks of HEIS in Ethiopia have two clear features. (1) Policy (decision) makers based, particularly for the curricular arrangements of a system (university), faculty Program/department. (2) Practitioners’ (teachers) based that includes curriculum designing and implementation for the courses, units, sub-units, specific contents, learning, experiences and assessment techniques.

Teachers’ exercise over course materials preparation and delivery is varying depending on their commitment levels. For example, most of the teachers who are experienced and research oriented seem good in their handling of courses. Some teachers with minimal experiences in teaching and research, on the other hand, lacks commitment and preparation to play the role and then to enhance engagement for their learners as well as for themselves.
5. CONCLUSIONS AND REFLECTIONS

Though establishing an institution (university), program (faculty) and department are involved with more of socio-political based decisions, there is a need to think about the soft-engineering (the curriculum) of the universities, faculties and departments. The courses in the department and the detail curriculum experiences (contents and learning experiences) in the course are critically important to ensure the life of the whole system of the HEIs. The establishment of the physical infrastructure of HEIs by itself is nothing unless it is filled with relevant and proper curriculum. Due to the assumption that HE teachers are excellent academia and researchers with plenty of resources and libraries, detail content selections and implementations are left for them, which is a different scenario from secondary school and below. Of course this responsibility is demanding for university teachers because the syllabus is a simple guide for the main topics.

On the one hand, there is a problem from scarcity of academic freedom and over work load. That is, various authorities (department heads, faculty deans, etc) sometimes and in some cases attempt to interfere and want to control the university teaching learning process. On the other hand, the available academic freedom (though small in amount) serves as a shelter for some teachers to cover what they are doing in relation to their content selections and implementations. As a result, they seem to manage the practices depending only to their own minimal scope without consulting more resources including their experiences in exhaustive manner.

Hence, to summarize in higher education, in relation to the contributions of teachers’ course experiences selections and deliveries to the effectiveness of the teaching learning practices, there are two major opinions from the interview as well as observation sessions. There are university teachers who enjoy and deliver the opportunities of course experiences selections and implementations thereby to use it as an input for their teaching learning practices. But on the contrary there are teachers who take this opportunity as a burden for them because it demands more reading and referring the related materials of the course. And therefore, they are not ready for doing persistently in accordance, that is, to develop and encourage deep thought, reflective behavior and innovativeness.

Therefore, university teachers have to understand that the given freedom to select detail contents and learning experiences is not to offer the courses in sub-standard rather to offer courses beyond the available guides in the syllabi which are sent from elsewhere. This tells that university teachers need to exert more efforts with depth thought and analysis in order to do their assignments, university teaching, to the expected standard.

REFERENCES


The Relationship between Students’ School-Based Extra-Curricular Activities Participation and Problem Behavior: The Case of Secondary Schools in Debre Markos Town

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Abstract

This survey study mainly investigated the relationship between school-based extracurricular activities participation and students’ problem behaviors. Three vice/principals, three unit leaders, three club coordinators and 460 students, who were selected from secondary schools in Debre Markos Town, participated in the study. To select student participants, a stratified random sampling procedure was employed, while vice/principals, unit leaders and club coordinators were selected by using purposive sampling techniques. The tools used in collecting data were self-report questionnaire and interviews. Percentage, mean, Chi-square, Pearson product correlation, and independent t-test were used for analyzing data. Results obtained through correlational analyses displayed that total hours of participation in school-based extracurricular activities were significantly negatively correlated with violence and cigarette smoking. However, total hours of participation in extracurricular activities have no significant association with alcohol use, chat chewing and truancy. The finding also depicted that the most common activities listed by students included in the sample were: art, civics and ethics clubs, health, public service related clubs, girls’ club and sport club. However, more males were involved in sport, art and public service related clubs, whereas more females participated in civics and ethics, health related and girls’ clubs. The t-test also revealed the existence of statistically significant difference in violence and substance use between participants and non-participants of extracurricular activities. However, there was no significant difference in frequency of truancy between participants and non-participants of extracurricular activities. Finally, the study concluded that students’ participation in extracurricular activities in the school were negatively associated with problem behaviors. We suggested schools to provide awareness on the importance of extracurricular activities in preventing problem behaviors; support clubs materially and financially; develop feasible plans that specify activities to be done at each club session; design extracurricular activities follow up mechanisms and reward systems.

1. INTRODUCTION

Background of the Study: A number of research findings revealed that problem behaviors such as truancy, violence and substance use are common problems in schools. For instance, Santrock (2002) stated that it is currently common for students to fight, bully other students, or threaten each other and teachers verbally or with a weapon. Similarly, a study conducted by Habtamu (1998) in particular reference to Addis Ababa Secondary Schools has found out that over 50% of the participants had a physical fight, stepped on someone’s foot, twisted parts of someone’s body, yelled at someone, bumped someone, and used a rock or a stick to hit someone. He further concluded that problems of violence or bullying are prevalent in Ethiopian High Schools. Problem behaviors such as using substances, school absenteeism, and take part in antisocial activities have been escalating from time to time (Brown, 1999). The prevalence of such problem behaviors in schools disrupt the learning environment and lead to serious social and economic problems (Brown, n.d). Since the problem is harmful to students themselves and to others, it has
become critical issues of many schools which required immediate responses in the form of prevention or intervention programs.

Extracurricular activities refer to involvement in organized groups or activities such as dance, football, and student government and may occur in or outside of school (Mello & Worrell, 2008). They categorized extracurricular activities as athletic (football, hockey, basketball/netball, cricket, swimming, table tennis), artistic (dance, solo instrumental music, choir music, steel band music, drama/acting, and photography), intellectual (student council, debating, chess, junior achievers), religious (religious clubs), and organized groups ( Scouts, Cadets). On the other hand, Amhara regional state Education Bureau (2005) categorized clubs to be established in schools into five: academic subject related clubs, public service related clubs, behavioral development, civics and self-governance, leisure time clubs and vocational clubs. Accordingly, specific clubs that can be established in private and governmental schools of Amhara regional state are health club, Mini-media club, environmental care and protection club, civics and ethics club, science and technology club, girls’ club, charity club, sport club, traffic club and library club.

Concerning students’ level of participation in extracurricular activities, Wilson (1999) indicated that more than half of American teenagers attending school participate in some sort of organized activities such as clubs, athletic opportunities, dance line or cheer teams, scouts, drama, or theater, youth groups, student council, and club sports.

With regard to type of extracurricular activities, Mello & Worrell (2008) reviewed that females participate in more diverse activities than males. Gender variation was observed in the ways that adolescents spent leisure time, with more females engaging in shopping and listening to music, artistic, religious, pro-social and civic activities, and more males participating in organized groups and sport-related activities (Darling, et al., 2005; Mello & Worrell, 2008). Darling et al. (2005) documented that there was no difference in extracurricular activity participation by grade. However, younger students who participated were more likely than older students to name sport as their most important activity.

Researchers indicated that participation in extracurricular activities could be one protective factor that might prevent students from being involved with problem behaviors (Brown, n.d). Berk (1995) explained that extracurricular activities are programs which are not part of the regular school, curricular program and structured in some way working towards some pro-social mission or goal; that is learning to work cooperatively with others, to be a responsible and productive contributor to society, to use leisure time effectively, and to develop one’s own abilities and talents to their fullest. In line with these objectives, researchers were conducted to see the impact of extracurricular activities on various areas including academic achievement, psychological wellbeing, life satisfaction, prevention of antisocial acts, student retention, etc.

The findings indicated that participation in school based extracurricular activities was associated with reduced rates of early dropout and criminal arrest among high-risk boys and girls (Mahoney, 2000; Cassel, et al. 2001); decreased likelihood of alcohol use, drug use, absenteeism, and related problem behaviors (Wilson, 1999; Carnegie, 1992, cited in Brown, n.d). In contrast, students who participated in school based extracurricular activities reported better grades and aspirations, and more positive academic attitudes, higher standardized test scores and higher educational attainment, attending school more regularly, having higher self-concept (Wilson, 1999; Darling, et al., 2005) and often enhance skills of team work and leadership, increased connectedness to the school (Wilson, 1999).
Mello & Worrell (2008) discussed about different theoretical perspectives on the protective roles of extracurricular activities from problem behaviors. They suggest that adolescents benefit from extracurricular activity participation through several processes, including engagement in prosocial activities, observing positive role models, or having access to a safe place to spend time. Others propose that academic-related benefits may occur through learning how to focus and structure time with extracurricular activities. Some other researchers argue that participation in extracurricular activities may play an especially important role in the lives of adolescents who face challenges due to economic or social situations, because the benefits of activity participation may offset such challenges. Besides, Harrison & Narayan (2003) argued that a sense of belonging to the family and to the school community is critically important for healthy adolescent development. Such bonding serves to protect against engagement in a variety of risk behaviors, including truancy, substance abuse, and delinquency. This shows how school connectedness has been found to be even more powerful than family connectedness in terms of protection against acting out behaviors in adolescence. Thus, from all of these perspectives, students may benefit from extracurricular activity participation.

However, the results on the relationship between participation in extracurricular activities and problem behaviors are not invariably positive. Some forms of extracurricular involvement for some kinds of students appear to be associated with either an absence of gains or negative rather than favorable outcomes (Berk, 1995). As a result, this study was conducted to examine the relationship between school-based extracurricular activities participation and students’ problem behaviors.

**Statement of the Problem:** According to Brown (n.d), students who participate in extracurricular activities have been found to be less likely to use substances such as drugs and alcohol, to drop out of school, misbehave at school, and commit delinquent acts. Although various researches show a significant inverse association between participation in extracurricular activities and problem behavior, other findings indicate positive or no associations among the two variables.

Despite the fact that school-based extracurricular activities as a context for promoting positive youth development and protecting youth from risks associated with unsupervised free time is advocated by few scholars and policy makers, this context has received little attention (Darling, et al., 2005, Mello & Worrell, 2008).

More over, we could not find adequate local literature and research findings showing clear picture of the relationship between extracurricular activity participation and problem behaviors. Thus, this study assumed to investigate the relationship between students’ extracurricular activity participation and problem behaviors in three selected Secondary Schools at Debere Markos town. In order to closely examine the issue, the following basic research questions were posed.

1. What is the extent of students’ participation in extracurricular activities?
2. Is there a relationship between students’ participation in school-based extracurricular activities and problem behaviors?
3. Is there a significant difference in male and female students’ participation in extracurricular activities?
4. Are problem behaviors (violence, substance use, truancy) significantly different across participant and non-participant students of school based extracurricular activities?

Objectives of the Study: The general objective of the study is to investigate the relationship between school-based extracurricular activity participation and problem behaviors. The whole study was specifically guided by the following objectives, i.e. to:

- examine the students’ rate of participation in extracurricular activities within the school setting;
- identify the relationship between participation in school-based extracurricular activities and problem behaviors;
- assess differences between male and female students’ participation in extracurricular activities; and
- examine differences in problem behaviors (violence, substance use, truancy) across participant and non-participant students of school based extracurricular activities.

Significance of the Study: The study may have theoretical significance by helping to determine how school based extracurricular activities participation affects problem behaviors. The study findings may also be useful to all stakeholders of educational settings for preventing or reducing students’ problem behaviors in schools. Besides, the study may also be relevant for teachers, principals and educational institutions for organizing, promoting and supporting extracurricular activities. Finally, the study may serve as a source for further studies.

Scope of the Study: Since there are various factors that prevent or reduce problem behaviors, it is difficult to investigate all variables at a time. Therefore, the study is only delimited to examine the relationship between school-based extracurricular activity participation and problem behaviors. Similarly, due to material and other resource constraints, the study was conducted in three secondary schools (Debre Markos, Gozamen and Menkorer) in particular reference to grade ten students at Debre Markos town.

2. METHODS

Research Design and Population of the Study: The purpose of this study was to relate school-based extracurricular activities participation and students’ problem behaviors. Since this research required large number of data from large number of people, survey design was employed.

The target population of this study was grade ten students, school vice principals, unit leaders and club coordinators at Debre Markos Town secondary schools. The reason why the target population was selected from Debre Markos town is because it was the researchers’ working and residence area where we are familiar with the culture and language of the society.

Although few extracurricular activities are run by elementary schools, they never flourished to the same extent as they did in high schools (Berk, 1995). The interests and skills of young elementary school pupils are probably not mature enough to support differentiated extracurricular program, and their social needs seem better served by the smaller, simpler peer organization of the self-contained classroom. Consequently, the focus of this study is on grade ten students where they do have variable interest and activity programs are more extensively developed.

Samples and Sampling Techniques: The study was conducted in three secondary schools namely Debre Markos, Gozamen and Menkorer Secondary Schools at Debre Markos town.
Out of 2219(1235 male and 984 female) students enrolled in three schools during 2010/2011 academic year, 514 students from grade ten were selected by using stratified random sampling techniques. The bases of stratification were school and sex of students. By considering their numbers in the respective school and sex, participants were selected in proportion to their representation in the population. After their number of representation in the sample size was determined i.e., from Debre Markos 235/1017(male 115 an/120 female students), from Gozamin 139/599(male 93 and female 46) and Menkorer 140/603(male 78 and female 62). Finally, by using lottery system, 514 students were selected for the study. However, some subjects failed to complete the instrument appropriately and others didn’t return the questionnaire. Three students did not indicate their sex. Those subjects who failed to complete the instrument appropriately were excluded from the analysis. Therefore, the analysis was based on the data obtained from 457(231 male and 226 female) students and three participants who didn’t indicate their sex.

Table 1: Number of student participants by school and sex

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<thead>
<tr>
<th>School</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debre Markos</td>
<td>115</td>
<td>120</td>
<td>235</td>
</tr>
<tr>
<td>Gozamen</td>
<td>93</td>
<td>46</td>
<td>139</td>
</tr>
<tr>
<td>Menkorer</td>
<td>78</td>
<td>62</td>
<td>140</td>
</tr>
<tr>
<td>Grand Total</td>
<td>286</td>
<td>228</td>
<td>514</td>
</tr>
</tbody>
</table>

In addition, three vice principals, three unit leaders, and three club coordinators were selected from the schools by using purposive sampling techniques. These participants were selected purposely by assuming that they do have better information regarding the issues dealt with.

**Instruments:** The main source of data for this study was self-report questionnaire. The questionnaire consists of three sets of items. The first set consisted of 3 items concerning demographic characteristics (sex, age and physical condition of the respondents). The second part comprised of 4 items about extracurricular activities and their level of participation. The third part contained 24 items about pro-social and problem behaviors particularly experience of truancy, chat, alcohol and cigarette use. The fourth part included 11 items that are assumed to measure violence. Extracurricular activity participation was measured based on student reports of activity-participation at school during the last school year. Students were asked to indicate whether they were participated in extracurricular activities with a yes or no response. Next, Students were asked to name the type of extracurricular activities and how many hours they typically spend on such activities. Students were classified as participants if they named an activity and indicated spending time on school extracurricular activities. Students who did not indicate spending any time on activities and did not name an activity were classified as non-participants. Extracurricular information was coded dichotomously, with 1=participation in a given activity and 0=no participation. By activity type, the extracurricular activities named were classified into nine categories: experience Ethiopia, library service, Health& HIV/AIDS, art related clubs (drama, music, language, mini-media & literature), public service related clubs (peace, traffic, environmental protection, charity, red cross), sport, civics and ethics, and girls’ clubs. More than seven percent of activities had been coded as two or more clubs participation.

To measure problem behaviors of the students (Truancy, Alcohol, Chat and Cigarette use), they were asked to report how often they had used alcohol, how often they had smoked cigarette and...
chewed chat since the past one month. The categories of the response were not happened in the past month, one to two times, three to six times, seven to ten times and more than ten times.

Finally, violence was measured by a scale comprising of 11 items assessing physical and verbal types of violence. The instrument asked subjects to indicate whether they had been showing violent behavior (e.g. insulting, fighting, threatening, kicking, slapping, damaging property, etc.,) and its frequency in five point Likert scale format in one months of reference time. The response categories were never, rarely, sometimes, often and always.

To supplement the data gathered through questionnaire, interview was held with school vice/principals, unit leaders and club coordinators. For this interview, some questions were set to guide the interview session.

Procedures of Data Collection: First, the researchers contacted school administrators and explained to them about the research we were going to conduct and its purpose. After having the consent of administrators, information regarding the total number of students across sex was collected from the administrator’s office. Then, determination of sample respondents for pilot and final study was made. After completion of the pilot testing, the finalized Amharic version of the questionnaire was administered in groups to the selected respondents in their respective schools. Prior to the administration of the questionnaire, the data collectors explained the purpose of the questionnaire. They also provided instructions by reading aloud on how to fill in the questionnaire in order to avoid response biases because of poor reading and misunderstanding. Following the explanation and instructions, the questionnaire was distributed to the respondents, and data collectors were available in close for individual assistance. Moreover, data were collected from school vice/principals, unit leaders and club coordinators. Before the interview was made, the purpose of the study was briefly explained. The participants of the study were told about the information gathered would be confidential and would not be used for other purpose other than this research. Then, based on questions set; interview was made with all participants. At times when interviews were made, the researcher took notes.

Methods of Data Analysis: After the data were collected, different statistical tools were employed for analysis. To compute the statistical data, statistical package for social science (SPSS 15 for Windows) was employed. To describe the demographic characteristics of subjects’ descriptive statistics mainly percentage, mean and standard deviation was employed. To check whether relationship exists between extracurricular activities participation in schools and problem behaviors, Pearson’s product moment correlation coefficient was used. To check the difference between male and female students’ participation in extracurricular activities, Chi-square test was employed. To test the significance mean difference between male and female students in their extracurricular participation and problem behaviors (truancy, substance use and violence), independent t-test was computed. Data collected through interview were analyzed qualitatively.

3. RESULTS AND DISCUSSION

This paper examines the association between participation in school-based extracurricular activities and students’ problem behavior (violence, substance use and truancy). In light of this objective, this section devoted to outline results and discussing results in relation with past findings.
The sample consisted of 231 (50.5%) male and 226 (49.5%) female students from three secondary schools in Debre Markos Town. Three participants did not indicate their sex.

Extracurricular Activity Participation by Type

Table 2: Students' extracurricular activity participation by type (N = 460)

<table>
<thead>
<tr>
<th>Extracurricular Activity</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-participant</td>
<td>171</td>
<td>37.2</td>
</tr>
<tr>
<td>Health Related Clubs</td>
<td>38</td>
<td>8.3</td>
</tr>
<tr>
<td>Art Related Clubs</td>
<td>44</td>
<td>9.6</td>
</tr>
<tr>
<td>Public Service Related Clubs</td>
<td>34</td>
<td>7.4</td>
</tr>
<tr>
<td>Sport Club</td>
<td>27</td>
<td>5.9</td>
</tr>
<tr>
<td>Civics and Ethics Club</td>
<td>44</td>
<td>9.6</td>
</tr>
<tr>
<td>Experience Ethiopia Club</td>
<td>20</td>
<td>4.3</td>
</tr>
<tr>
<td>Library Services Club</td>
<td>18</td>
<td>3.9</td>
</tr>
<tr>
<td>Two or more clubs participation</td>
<td>34</td>
<td>7.4</td>
</tr>
<tr>
<td>Girls' Club</td>
<td>30</td>
<td>6.5</td>
</tr>
<tr>
<td>Total</td>
<td>460</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As indicated in Table 2 above, students reported participation in many extracurricular activities. The majority participated in at least one extracurricular activity (n = 289, 62.8%). While 37.2 percent were not involved in any extracurricular activities.

This study indicated that 62.8 percent of students participated in at least one extracurricular activity. The percentage of students participating in extracurricular activities in this study is lower than reports from Trinidadian adolescent samples, which indicate that about 85% of adolescents engage in such activities (Mello & Worrell, 2008).

Descriptive analyses were also performed to examine the types of extracurricular activities students actively involved. In order of frequency, the most common activities listed by students included in the total sample were: art related and civics and ethics clubs (9.6% each), health related clubs (8.3%), public service related clubs (7.4%), girls' club (6.5%), and sport club (5.9%). However, the most popular activities in Trinidadian adolescent samples were athletics, followed by artistic, intellectual, religious, and organized groups such as Cadets (Ibid.).

Gender Variation on Extracurricular Activity Participation

As indicated in Table 3, 39 percent of males and 35 percent of females were not involved in extracurricular activities, while 61% and 65 percent of males and females respectively were involved in extracurricular activities. This finding is inconsistent with the findings of Darling, et al. (2005) which indicated that boys were slightly more likely to participate in extracurricular activities than girls in California and Wisconsin high schools.
Table 3: Percentage of Students Participating in Extracurricular Activities by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Club names students get participated</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NP</td>
<td>HR</td>
</tr>
<tr>
<td>Count</td>
<td>90</td>
<td>17</td>
</tr>
<tr>
<td>Expected Count</td>
<td>85.4</td>
<td>19.2</td>
</tr>
<tr>
<td>% within gender</td>
<td>39.0</td>
<td>7.4</td>
</tr>
<tr>
<td>% within Club names</td>
<td>53.5</td>
<td>44.7</td>
</tr>
<tr>
<td>% of Total</td>
<td>19.7</td>
<td>3.7</td>
</tr>
</tbody>
</table>

| Count  | 79 | 21 | 20 | 14  | 4  | 32 | 5  | 7  | 14 | 30 | 226 |
| Expected Count | 83.6 | 18.8 | 21.8 | 16.8 | 13.4 | 21.3 | 9.9 | 8.9 | 16.8 | 14.8 | 226 |
| % within gender | 35.0 | 9.3 | 8.8 | 6.2 | 4.4 | 1.9 | 3.1 | 3.1 | 6.2 | 13.3 | 100 |
| % within Club names | 46.7 | 55.3 | 54.5 | 41.2 | 14.8 | 74.4 | 25.0 | 38.9 | 41.2 | 100 | 49.5 |
| % of Total | 17.3 | 4.6 | 4.4 | 3.1 | 0  | 7.0 | 1.1 | 1.5 | 3.1 | 6.6 | 49.5 |

| Count  | 169 | 38 | 44 | 34  | 27 | 43 | 20 | 18 | 34 | 30 | 457 |
| Expected Count | 169 | 38 | 44 | 34 | 27 | 43 | 20 | 18 | 34 | 30 | 457 |
| % within gender | 37 | 8.3 | 9.6 | 7.4 | 4.4 | 1.9 | 3.1 | 3.1 | 6.2 | 13.3 | 100 |
| % within Club names | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| % of Total | 37 | 8.3 | 9.6 | 7.4 | 4.4 | 1.9 | 3.1 | 3.1 | 6.2 | 13.3 | 100 |

Np= non participation; HR= Health related club; AR= art related club; PSR= Public Service Related Clubs; S= Sport club; CE= Civics and Ethics Club; KC= Know your Country Club; LS= Library Services Club; TM= Two or more clubs participation; G= Girl's club; T= Total; G= Gender: M= Male; F= Female

In this study, among the total number of male participants, 10.4 and 10.0 percent respectively were involved in art and sport related clubs. From the total female participants, 14.2 and 13.7 percent respectively were involved in civics and ethics and girls' clubs.

Table 4: Gender difference in students' participation of extracurricular activities

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>DF</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Cramer's V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>63.086(a)</td>
<td>9</td>
<td>.000</td>
<td>.372</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>76.780</td>
<td>9</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>6.183</td>
<td>1</td>
<td>.013</td>
<td></td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>457</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.90.

This study also examined gender difference with extracurricular participation. A Chi-square test for independence indicated significant difference in extracurricular activity participation by gender, X^2 (9, n = 457) = 63.09, P = .00, Cramer's V = .37. Among those who participated, male students were more likely than girls to name sport, art and public service related clubs as their most important activity and less likely to name extracurricular activities such as civics and ethics, health related and girls' clubs. Hence, more males were involved in sport; art and public service related clubs, whereas more females participated in civics and ethics, health related and girls' clubs. The finding is consistent with the study of Darling, et al. (2005); Mello & Worrell. (2008) who indicated that males participated in more sport activities than females, who participated in more pro-social and civic activities; and inconsistent with the findings of more females participated in artistic activities than males.

As shown in Table 5 below, there was statistically significant relationship between age and alcohol use (r=.175, p<.01) in particular and substance use in general (r=.132, p<.01). Even
though the relationship found was weak, the positive correlations imply that students having higher age levels were more likely to use alcohol. Moreover, total hours of participation in extracurricular activities has significant association with cigarette smoking ($r = -0.114, p<0.05$) and violence ($r = -0.123, p<0.05$). This weak and negative relationship demonstrates that those students who spent longer number of hours in participating in extracurricular activities were less likely to smoke cigarette and to be involved in violent actions. However, total hours of participation in extracurricular activities have no significant association with alcohol use, chat chewing and truancy.

The Relationship between Extracurricular Activity Participation and Problem Behaviors

Table 5: Interrelationship between total hours of participation and absenteeism, substance use and violence

<table>
<thead>
<tr>
<th>N</th>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age</td>
<td>.056</td>
<td>.080</td>
<td>.175(**)</td>
<td>.016</td>
<td>.081</td>
<td>.044</td>
<td>.132(</td>
<td>**)</td>
<td>17.60</td>
<td>1.45</td>
</tr>
<tr>
<td>2</td>
<td>Total hours of participation per week</td>
<td>-.047</td>
<td>-.046</td>
<td>.066</td>
<td>-.047</td>
<td>-.046</td>
<td>.114(*)</td>
<td>*</td>
<td>.123(</td>
<td>.042</td>
<td>.79</td>
</tr>
<tr>
<td>3</td>
<td>Truancy past 30 days</td>
<td>.270( **)</td>
<td>.347(</td>
<td>.239</td>
<td>.376(</td>
<td>.81</td>
<td>.97</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Alcoholic use past 30 days</td>
<td>.353</td>
<td>.357(</td>
<td>.359</td>
<td>.810(</td>
<td>.66</td>
<td>.99</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Chat use past 30 days</td>
<td>.504(</td>
<td>.196</td>
<td>.751(</td>
<td>.20</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Cigarette use past 30 days</td>
<td>.406(</td>
<td>.752(</td>
<td>.14</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Violence past 30 days</td>
<td>.430(</td>
<td>15.60</td>
<td>6.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Substance use (alcohol, chat &amp; cigarette) past 30 days</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.0</td>
<td>1.82</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (two-tailed). * Correlation is significant at the 0.05 level (two-tailed).

The finding revealed that students who spent more hours in extracurricular activities were less likely to smoke cigarette. Consistent with this finding, extracurricular activity participation was found to have a significant association with a lower likelihood of substance use (Brown, 1999). However, his findings were not fully consistent with this study. For example, in our study, number of hours participating in extracurricular activities had no association with chewing chat and alcohol use. In line with our research findings, Darling, et al., (2005) found that there was no association between extracurricular activity participation and alcohol drinking. Even, they demonstrated that adolescents who participated in sports reported higher alcohol use than both non-participants and those who participated in non-sport extracurricular activities; and there was no difference in alcohol use reported by non-participants and those who participated in non-sport...
extracurricular activities. This might be due to the cultural influence of the community in which students are encouraged to consume local beer and arki during holidays.

With regard to violence, the data revealed that students who spent more hours in extracurricular activities were less likely to be involved in violent behaviors. Similarly, Cassel, et al. (2001) and Brown (n.d) has shown that those students who become heavily involved in extracurricular activities tend to be model students and less likely to misbehave at school, commit delinquency and crime. The finding of this study also shown that the number of times a student reported truancy in the past 30 days was not significantly related to the number of hours spent in extracurricular activities. Consistent to this finding, a research conducted by Brown (1999) found that the number of times a student reported cutting class was not significantly related to extracurricular participation.

Table 6: Mean difference in problem behaviors by extracurricular activity participation

<table>
<thead>
<tr>
<th>Variables</th>
<th>Club membership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>T</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violence Score</td>
<td>Non-participant</td>
<td>142</td>
<td>17.234</td>
<td>8.16468</td>
<td>.68516</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Participant</td>
<td>283</td>
<td>14.780</td>
<td>5.07856</td>
<td>.30189</td>
<td>3.786*</td>
<td>423</td>
</tr>
<tr>
<td>Substance use</td>
<td>Non-participant</td>
<td>169</td>
<td>1.2426</td>
<td>2.07745</td>
<td>.15980</td>
<td>2.199*</td>
<td>454</td>
</tr>
<tr>
<td></td>
<td>Participant</td>
<td>287</td>
<td>1.8571</td>
<td>1.62922</td>
<td>.09617</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truancy</td>
<td>Non-participant</td>
<td>167</td>
<td>.90</td>
<td>1.121</td>
<td>.087</td>
<td>1.648</td>
<td>452</td>
</tr>
<tr>
<td></td>
<td>Participant</td>
<td>287</td>
<td>.75</td>
<td>.865</td>
<td>.051</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<.05, two-tailed test

An independent-samples t-test was also conducted to compare the problem behaviors by extracurricular activity participation. As indicated in Table 6, there was significant difference in mean violence scores of non-participants (M=17.23, SD=8.16) and participants (M=14.79, SD=5.08) of extracurricular activities; \( t \) (423) = 3.786, \( p = .000 \) (two tailed) in favor of non-participants. There was also significant difference in mean substance use scores of non-participants (M=1.24, SD=2.08) and participants (M=.86, SD=.63) of extracurricular activities; \( t \) (454) = 2.199, \( p = .028 \) (two tailed) in favor of non-participants. However, there was no significant difference in frequency of truancy among participants and non-participants of extracurricular activities \( t \) (452) =1.648, \( p = .100 \) (two-tailed).

This test explores gender differences in violence scores, substance use and truancy. This study depicted that male students scored higher means than female students in variables of violence and substance use compared. A study by Habtamu (1998) found similar result that is more boys than girls hit or slap someone, destroy someone's property, have a physical fight with someone, kiss someone by force, and threaten to hurt someone. This might happen due to sociocultural factors such as rearing style, gender socialization and hormonal factors like females possess less level of testosterone. However, there was no statistically significant difference in frequency of truancy scores between male and female students.
Gender Variation in Problem Behaviors

Table 7: Gender differences in mean scores of problem behaviors

<table>
<thead>
<tr>
<th>Variables</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SEM</th>
<th>T</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violence</td>
<td>Male</td>
<td>213</td>
<td>16.465</td>
<td>6.798</td>
<td>.466</td>
<td>2.904*</td>
<td>421</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>210</td>
<td>14.686</td>
<td>5.751</td>
<td>.397</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance use (alcohol, chat &amp; cigarette)</td>
<td>Male</td>
<td>229</td>
<td>1.411</td>
<td>2.178</td>
<td>.144</td>
<td>4.922*</td>
<td>451</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>224</td>
<td>.589</td>
<td>1.235</td>
<td>.083</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truancy</td>
<td>Male</td>
<td>228</td>
<td>.87</td>
<td>1.111</td>
<td>.074</td>
<td>1.358</td>
<td>449</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>223</td>
<td>.74</td>
<td>.801</td>
<td>.054</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<.05, two-tailed test; SD= Standard Deviation; SEM= Standard error mean; Df = Degree of freedom

Similarly average substance use score of boys (M=1.41, SD=2.18) was significantly different from that of girls (M=.59, SD=1.24) in favor of male students. There is no statistically significant difference in frequency of truancy scores (t) (449) =1.358, p=.175(two-tailed) between males and females. Despite male students had slightly higher mean scores in experience of truancy than female students, the t-test revealed no significant differences among males and females in substance use mean scores.

Results of Interview: In this section, data collected through interview from school vice/principals, unit leaders and club coordinators are presented. The first issue dealt with was about the availability of guideline developed by Amhara Regional State Education Bureau or Ministry of Education for implementing extracurricular activities at school levels. Except one, all other participants demonstrated that no guideline is available. Rather, schools are working by following the plans at each level (from education bureau to zonal, woreda and school levels), and in view of leaflets and brochures as well as by allowing every club to develop its own bylaw. The bylaw describes about the objectives, activities, criteria for membership, the structure, executive committees and their responsibilities, and measures to be taken when members violate the bylaw. The interview participant explained that if members were not respecting rules of the club, measures will be taken including cancellation of membership. With regard to joining clubs, participants mentioned that membership is based on interest and voluntarism. The way they register members is through first orienting the school community about the club at classroom and in flag ceremonies. Then, those who show interest towards the club will be registered. The type of clubs that can be established in private and governmental schools of Amhara regional state were listed by interviewees as sport, health & HIV/AIDS, peace, charity, civics and ethics, girls’ club, traffic, environmental care and protection, high achiever students, ICT, tax, mini-media, science and technology, fine arts and library club.

Concerning the question, do clubs and the school have yearly plans, the club coordinators and principals responded that clubs and the school do have plans. Despite each club designed yearly plan, they failed to prepare practical, workable and interesting tasks that evoke the interest of members. Regarding the allotted time for club activities, they reported that the school allotted one hour every two weeks.

The interview participants also reported about the effect of participation in extracurricular activities. The majority of participants displayed that in theory participation of students in clubs results in developing their skills, talent, improves their social interaction, and promotes prosocial
behavior and protected from being involved in problem behaviors. Since the extracurricular activities were not implemented effectively and efficiently, practically the effect assumed to be not different from non-participants. In support of this assumption, one interviewee revealed that participants of extracurricular activities were found to be low achievers and frequently show misbehaviors at classroom, within and outside the compound of the school. They also reported that there was lack of recording behavioral problems and changes being shown as a result of participation.

Concerning support given for clubs, the interviewees agreed that the support given was inadequate. Of course, the problem varies across schools. For example, interviewees in Debre Markos secondary schools reported that clubs do have limited material and financial support. However, other schools do have financial challenges. One interviewee indicated that the number of clubs to be established were many and beyond the capacity of schools to support and make it functional. Thus, the clubs had shortage of financial and technical support. For example, the instrument used for mini media in Menkorer School was not working since the beginning of 2004 E.C.

Though teachers were assigned in the club as coordinators or members, the commitments they have were reported to be lower. As a result, they were not contributing as expected. They mentioned that teachers lack interest to come to the opposite shift since it is a voluntary and a free time task. Besides, they need their own personal money for transport. Some of them commented that teachers say “why I pay my money for tasks that do not benefit me and students as well.” Similarly, since significant number of students was living in distant places including rural areas; they were not able to avail themselves at the opposite shift. According to interviewee participants, the works done by clubs were found to be inadequate. Some clubs were established not because they are beneficial rather the existence of the structure forced to do so. There is a view in some participants that clubs were established not to support the teaching learning process but for just report purpose. As a result, students lack interest to join clubs. Even, after they registered, they get disappeared. What they need is the certificate they finally awarded after the end of the academic year. The follow up mechanism has also reported to have its own limitations. Attention was not given by the school administration just like the formal curriculum.

To the question, who typically participates in clubs’ leadership, participants stated that teachers involved in the leadership of clubs. Though teacher’s leadership will restrict students from experimenting in activities such as substance use and other problem behaviors, teachers’ lack of commitment negatively affect the well-functioning of clubs. Regarding the question of major challenges of clubs in the school, participants reported lack of interest among teachers and students, weak follow up and supervision mechanisms, too many numbers of clubs and the attention given and the importance attached to the extracurricular activities were low. Low commitment of teachers, absence of rewarding systems, absence of refreshment trainings and inadequate time allotment for extracurricular activities were also mentioned as major challenges.

4. CONCLUSIONS AND RECOMMENDATIONS

Conclusions: The findings of this study indicated that total hours of participation in school-based extracurricular activities were significantly negatively associated with violence and cigarette smoking. The findings also revealed that there was a statistically significant difference in violence and substance use between participants and non-participants of extracurricular activities. From this findings, we can conclude that students’ participation in extracurricular
activities either promote desirable behavior or retard problem behaviors especially violence and smoking cigarette. Similarly, the present finding indicated that there was statistically significant difference between male and female students' participation in extracurricular activities, involvement of violence and substance use.

Recommendations

1. The School community has to understand that extracurricular participation is negatively associated with problem behaviors (Smoking cigarette and violence). Hence, the school community has to be taught about the importance of students' involvement in extracurricular activities.
2. It is better if the school administration designs follow up mechanisms including field visit and develop reward systems that can create competition among clubs.
3. The administration of the school should give due attention to extracurricular activities and support clubs materially, financially and technically.
4. It is preferable if the school reduce the number of clubs in line with its capacity.
5. The school administration in consultation with teachers, students and parents should increase the allotted time for extracurricular activities, design feasible plans and arrange exhibitions for better achievements.

REFERENCES


Action Research Practice of Higher Education Preparatory Secondary School Teachers:
The Case of West Gojjam Administrative Zone

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Abstract

The purpose of this study is to assess the participation of higher education preparatory secondary school teachers in action research in West Gojjam Administrative Zone. This study is used to explore those factors that hinder the realization of action research in schools. Descriptive survey was employed as a method of research. Open, and closed ended questionnaire, focused group discussion, interview and document analysis were used as instruments of data collection. The information was collected from randomly selected six schools, six woreda education offices, West Gojjam Zone Education Department and Amhara Regional state Education Bureau. Teachers, school principals, educational experts/officials were participated as subject of the study. The statistical data gathered through questionnaire was analyzed using percentage and the rest of the data were expressed in a form of narration. The findings of the study indicated that higher education preparatory secondary school teachers' understanding about action research was medium. Educational experts who are expected to provide support for teachers had no detail knowledge and skill about action research. Insignificant number of higher education preparatory secondary school teachers involved in action research. The study also revealed that teachers conduct research mainly for partial fulfillment of their first degree and promotion purpose. Engagement of teachers in action research activities had been hindered by lack of training, lack of support and monitoring, work overload and shortage of time, lack of incentives, lack of interest, absence of commitment, less attention given and focused on occasionally arranged activities, organizing training; establishing research coordinating unit at each level (school, woreda, zone, regional); enhancing the support and follow-up system; establishing motivational mechanism were forwarded as suggested solutions.

1. INTRODUCTION

Different writers define action research in different ways. Action research is an applied research done to answer a specific practical problem that results in action (Denscombe, 1999; Sparks, 2002). It is a form of reflective process that enables practitioners or teachers to investigate learning problems and evaluate their work (MacNiff and Whitehead, 2006; Heron, 1996; and Zuber-Skerritt, 1996). Furthermore, MacNiff and Whitehead, (2006) explained about peculiar characteristics of action research in the following way: “Anyone and everyone can do action research. You do not need any specialized equipment or knowledge. All you need is curiosity, creativity, and a willingness to engage “. This means that the teacher can conduct action research without detailed prerequisite knowledge and using locally available resources. The major thing to be considered here is that teachers’ commitment to improve students’ learning and love for their profession.

The goal of action research is to help teachers become adaptive experts or reflective practitioners who are prepared for effective lifelong learning that allows them continuously to add to their knowledge and skills (France, 2000; Elliot, 1991; Hopkins, 1993; Sagor, 1992). Action research is to study a real school situation with a view to improve the quality of action and results within
it. It aims also to improve one’s own professional judgment and to give insight into how better achieve desirable educational goals (Amare, 2000).

From a number of situations and factors, teachers’ competency has a greater place in improving the instructional process by identifying students as well as school problems through action research (O’Brien, 2001; MOE, 2002; MOE, 2004). It is also through action research that teachers examine themselves whether they are going on the right way or not.

Considering the above concepts, the Ethiopian education system has been encouraging teachers to conduct their own research as for it plays tremendous role in improving professional efficiency and quality of class room teaching (Seyoum, 1998). Moreover, carrying out research in schools is being taken as one of the requirements for teachers to improve the quality of education as well as promotion in the career structure (MOE, 1994).

According to the policy document of Ethiopia (MOE, 2002), teachers at all school levels are required to involve in action research activities. School principals are charged with responsibilities to facilitate and create favorable conditions for action research. Educational officials and experts are also supposed to evaluate as well as use the study results in a school context. Ministry of education also designed and tried to implement teachers’ continuous professional development program at schools. In this program action research is one of the elements expected to improve the teaching learning process. But still teachers are not in a proper position to participate and apply action research.

The researcher has experience that most of the teachers are not interested to be involved in action research which requires teachers’ critical effort and working with others. Teachers were raising different challenges when the researcher was discussing with them about the participation of teachers in action research. School context is also another challenge to support and follow-up the participation of teachers in action research.

The information obtained from the discussion and the researcher’s experience showed that there are challenges related to knowledge of action research, attention, motivation and support. Due to these problems there is the mismatch between what the literature and the policy document indicates and the real practice of action research in schools. This is the very reason that the researcher is initiated to come with evidence of the problems as well as strategies which would fill the gap to conduct action research.

Objectives of the Study: The general objective of the study was to identify the significant factors that bring about the low participation of teachers in action research. The specific objectives of the study were to: examine the extent of teachers’ engagement in action research; assess constraints to hinder teachers’ involvement in action research; and recommend alternative strategies to implement action research in Higher Education Preparatory Secondary schools.

Relevance of the Study: The finding of this research appeared to be quite important, informative and timely in the following way:

The finding of the study can be used as an input for educational practitioners and decision makers to see the extent of teachers’ involvement in action research. It gives insight to develop support and follow-up system that is needed for teachers who are working in Higher Education Preparatory Secondary school to conduct action research.

It may also be significant in initiating teachers to participate actively.
Delimitation of the Study: The scope of this study is delimited to action research which is assumed to be very essential to improve the teaching learning process. Conducting a study on action research may require wider coverage at all levels of educational institutions. But due to financial constraints and time shortage, the researcher was delimited to Higher Education preparatory Secondary School teachers.

2. METHODOLOGY OF THE STUDY

A quantitative approach was used in this study to produce generalizable results from relatively larger population (Best and Kahn, 2007). In this study the researcher has employed descriptive survey research design to collect detailed description of the existing phenomena with the aim of employing data to justify current conditions (Burns, Robert, 2000). Descriptive survey research design is appropriate to gather information concerning about the existing status of teacher engagement in action research and the school environment.

Subjects of the Study: Teachers, school principals, woreda education officials / experts, zone education department experts and regional education bureau expert were participated as a source of data.

Sampling Technique and Sample Size: When the data was collected there were 12 higher education preparatory secondary schools in the zone which accommodated a total of 535 teachers. The sample sites include Adet, Merawi, Durbete, Shindi, Damote and Dembecha. In the selected schools total of 316 teachers were working during the study season. The sample respondents were selected using simple random to get equal probability and purposive sampling technique for those who have unique position. Number of teacher for sampling was determined by quota sampling to maintain the proportion of respondents at each school.

In this study, a total of 97 respondents had been used as a sample. The sample included 83 teachers, 6 school principals, 6 woreda education officials / experts, 1 zone education department expert and 1 regional education bureau expert. Teacher respondents were selected using simple random sampling and other respondents were selected using purposive sampling technique based on their responsibility.

Data Gathering Instruments: Instruments to collect the data were questionnaire, interview, focused group discussion and document analysis. The questionnaire contained open and closed ended items. Leading questions was prepared for interview and focused group discussion. Document analysis such as, action research documents conducted by teachers, minutes, plans and guidelines were used as secondary source of data for the study.

Data Gathering Procedure: In the process of data collection the researcher considered the ethical values of the research including permission (Bogdan and Biklen, 2003). The data from teachers was gathered through questionnaire and focused group discussion. Interview was carried out with school principals, educational experts and officials. Documents such as, minutes, plan of school on action research, guidelines prepared by regional Bureau, action research documents conducted by teachers were reviewed.

Data Analysis Methods: This research has applied simple statistical approach using percentage. Particularly for the data collected through questionnaire. Other data obtained through interview, focused group discussion, were discussed in the form of narration.
3. RESULTS AND DISCUSSIONS

In order to collect data 83 copies of questionnaire were distributed to teacher respondents at higher education preparatory secondary schools. From this copies 74 (89.2%) were completed and returned. Among 74 teacher respondents, 61 were males and 13 were females. Focused group discussion was also carried out with teachers in addition to questionnaire. Interview was employed with school principals and educational experts/officials at school, woreda, zonal and regional level. Results and discussions were organized on awareness, purpose, degree of involvement, research issues, support and follow-up: challenges and considerable measures.

Knowledge and Skill about Action Research: Teacher respondents were asked to rate their perception about the awareness of teachers. The data from questionnaire shows that more than average number of respondents (56.8%) rated the awareness of teachers on action research was at the medium level. The considerable number of respondents (39.2%) replied as low and the remaining (4%) as high.

Teachers were also asked to rate their training access to have knowledge and skill about action research. Almost all respondents (93.2) replied that teachers developed their understanding about action research when they were attending their education in universities/colleges. Half of teacher respondents (51.4%) responded that the experience share among teachers within their school was the second opportunity. The remaining few number of respondents (18.9% and 14.9%) answered that the experience share between schools; and short term trainings such as workshops and seminars were opportunities provided for teachers respectively. Other opportunities indicated by very few number of teachers (2.7%) was when teachers participated in continuous professional development training.

Teachers were also invited to discuss in groups about the knowledge and skill on action research. Most of participants agreed that teachers did not have adequate knowledge about action research. Furthermore, discussants replied that trainings or courses on action research were not available to brief the implementation. In this regard, one teacher said:

Most of teachers, including me, had taken educational research at university was not satisfactory and could not enable us to do research confidently. This was mainly instructors did not check whether we carried out by our own or through coping from others. The other reason is that it was given to us as a distance course and was insufficient to allow us to engaged in action research

From the above description one can understand that the higher education preparatory secondary school teachers have less confidence in conducting action research as a result of the inadequate training given to teachers.

Teachers in their focused group discussion, school principals and experts/officials had almost similar response that the consciousness of educational experts at different levels was low and have no detail knowledge and skill about action research to support teachers. There was not satisfactory training given to educational experts to support the program effectively. One of the research participants explained the situation in the following way:

The very serious problem observed on educational experts at woreda and zonal level was that they were trying to convince without having the knowledge of action research. Surprisingly, you cannot observe any educational expert who is capable of evaluating the research work and of providing feedbacks.
From this one can easily infer that lack of understanding about action research may lead as a complex task and becomes difficult for school teachers to improve students' learning.

**Purpose for which the Teachers Conducted Research:** In this regard, almost all of the teacher respondents (95.9%) replied that the primary motives of the teachers in conducting research were in order to partially fulfill their courses requirements. Apart from this 44.6% of informants answered that some of the teachers used to conduct research to get promotion from one rank to the next career structure’s ladder. A few number of respondents (12.2%) responded that teachers took place research in relations the problems they encountered in the teaching learning process. In the focused group discussion, one of the group members stressed his idea in the following way:

> The main reason that teachers have undertaken past -present research was usually associated with writing of senior essays for partially fulfillment of course requirements and with career structure that is promotion. Thus I can say that participation in research activities in our school is very low. Most of teachers have distanced themselves from conducting action research.

Almost all informants share the above views in common that the higher education preparatory secondary school teachers were not in a position to be exemplary action research workers that initiate others and model teachers who could promote others to be involved in action research activities.

**The Degree of Action Research Involvement:** As the data indicated that the extent to which the higher education preparatory secondary school teachers participated in action research was low or almost inexistent. In addition to teachers' response through questionnaire, all of the interviewees and focused group discussants supported the above information. For instance, one of the teachers from focused group discussion explained the research conditions of the teachers by saying:

> As far as I know every teacher knows very well that he/ she must conduct action research. But the effort made to involve in action research activities proved to be very low. We teachers think about doing research, we have lacked commitment and courage change into practice.

It is evident from the data that the extent to which the higher education preparatory secondary school teachers’ participation in action research found to be insignificant. Although teachers are expected to do action research in classroom at a school level, they have reserved themselves from engaging in action research and have simply confined themselves only to their teaching tasks.

**Research Issues Addressed by Teachers:** It is mainly the responsibility of teachers to investigate different kinds of classroom and school problems (Amare, 2000). The evidence from questionnaire showed that those teachers who have done research, gave more emphasis on teaching methods, evaluation of curriculum materials, student’s disciplinary problem, about school facilities, dropouts, participation of female students.

Teachers were also asked in their focused group discussion regarding the research problems addressed. One of the participants described his view as follows:
I can say that in fact few teachers who were involved in action research usually focused on issues as teaching methodology evaluation of subject text books or relevance of contents, students disciplinary problems...In general they usually gave emphasis on problems encountered in the classrooms even though they were not implemented their findings to improve students' learning.

In addition, the document analysis and my own experience as a teacher proved the truthfulness of the above findings that teaching methodology and evaluation of curriculum materials were among the major problem or issues the teachers commonly attempted to address in their research papers. Other minor concerns were Problem of students' discipline and cause of dropouts. This shows that most of the issues the teachers tried to conduct action research were on practical problems observed in the class room and school environment.

Support and Follow-up to Strengthen Action Research Participation: Teacher respondents were asked to react about the availability of support and monitoring system. Most of teacher respondents (75%) through questionnaire replied that the support in the form of training, experience share, availability of reference materials and budget allocation to action research was low. In addition to the less organized support system, the monitoring and the feedback system also insignificant witnessed by 89.2% of respondents. From the document analysis as well, it is found that even though there were plans, the practice of support and monitoring was not carried out properly.

In the focused group discussion, teachers raised as there was no responsible body or unit to run action research in an effective manner. One of the participants said as:

*In my school the school administration facilitated only stationary support when I and my colleagues were asking. Other experts who came from woreda and zone for supervision had no detail knowledge about action research. They can't provide expert support how and when to undertake action research, but simply talked about it as a formality and not to bring results.*

Interview conducted with school principals and educational experts at each level shared the above response. They told to the researcher that it was the critical problem in the region which needs urgent improvement because support and monitoring is an important aspect to strengthen and know the effectiveness of action research implementation. In this regard one of the woreda experts explained as follows:

*Including my woreda and others, the main problem to be improved is that less attention given to support an follow up mechanism. No budget is allocated for research particularly for action research. The training activities had been followed up through principals' meetings, reports and occasional visits of some schools.*

Thus, we can infer from this data that due to the limited support and follow-up system the practical application of action research in higher education preparatory secondary school is not in the proper way.

Challenges in Implementing Action Research: Higher Education preparatory secondary school teachers were asked openly through questionnaire to mention the major factors which hindered to be involved in action research. The points are summarized in the following way:
• lack of skill and knowledge to implement action research.
• lack of interest
• shortage of training on action research
• absence of incentives
• lack of significant support and follow-up
• shortage of time or high work load

Teachers in their focused group discussion expressed their view on the above problems which hinder the implementation of action research. It is truly accepted that teachers' knowledge or skill in action research is necessary. This knowledge or skill can be developed through practice and training (Elliot, 1991). But the data demonstrated that most of the preparatory teachers have lacked the knowledge/skill how to carry out action research. The study has shown that almost all the participants uniformly agreed on the importance of competence in action research as prerequisite for involving in it. In relation to the problems with the teachers' research knowledge/skill, one of the group members reported:

*Teachers including myself are forced to do action research under the conditions we have lacked competence in research. The training we had taken on research methodologies at university was not adequate. Some of the teachers even did not take any training and have no idea about action research. Thus it could not enable us to initiate to do action research on problems observed in class room and in schools.*

According to the participants, lack of prior training or shortage of knowledge on action research was the major constraint to be engaged in it. Because other factors like teachers' interest and commitment are determined by teachers' understanding on action research.

Absence of incentives or motivation didn't encourage higher education preparatory secondary school teachers to involve in action research. All teacher participants in the focused group discussion mentioned that incentives for those teachers who involved in action research was almost none and do not attract teachers to participate in research activities. In relation to this issue, the participant informed:

*Incentives in a form of material, finance, promotion and others forms is very weak. The discontinuation of career structure has also its greater contribution that discouraged the teachers to take initiatives to involve in research activities.*

Still most of the research participants have capitalized on the provision of personal promotion or to get rewards so as to initiate teachers' involvement in action research activities. From the above description one can understand that the provision of incentives in one form or another seems to be given higher emphasis. The availability and utilization of reference books, research journals, model research papers, internet and other facilities are important elements to enhance teachers' involvement in action research (Seyoum, 1998). On this point one of the discussant said:

*The library in our school is ill equipped there are no research reference materials, research journals, and documented research papers. Even there are shortages of chairs and tables to use in the library. In such a condition, it is not fair to force us to do research and expect something in relation to research particularly action research.*
The school administration shared the above idea that the library facilities was insufficiently equipped to attract research works. From the above data one can understand that teachers might suffer with the poor existence of reading materials to carry out research activities.

Lack of significant support and follow-up was also a critical problem to apply action research in schools. Discussion with the research participants indicated that the support provided for the higher education preparatory secondary school teachers who tried to conduct research seems negligible in the school as well as at woreda level. Very few teachers were supported in a form of stationery and secretarial services.

Shortage of time or work load is also another problem mentioned by research participants. Research is a time-consuming activity, and to perform such activities teachers need to be provided with adequate time in order to be able to involve in research activities.

**Measures to Be Taken to Improve Action Research:** Respondents were invited to suggest how to improve higher education preparatory secondary school teacher’s involvement in action research. Almost all informants held the view that if tangible actions will be taken to alleviate obstacles, there might be a better future to teachers’ engagement in action research in the school.

In this regard, informants suggested the following major points which need intervention:

- organizing training on educational research particularly on action research to increase teachers’ knowledge and skill.
- organizing research coordinating unit at each level (school, woreda, zone, region)
- developing and enhance support systems
- establishing motivation mechanisms or incentives
- establishing follow-up system

4. CONCLUSIONS AND RECOMMENDATIONS

**Conclusions:** Action research has greater contribution to the improvement of quality education. It is directly or indirectly indicated that teachers’ participation in action research has been one of the criteria for teachers’ promotion. This study has found out that higher education preparatory secondary school teachers had no detail knowledge and skill about action research. On the other hand those teachers who had relatively better knowledge or training on research methodology have better attempt in doing research activities than those who did not take any research training or those with less knowledge on action research. Moreover, educational experts who are expected to provide expert support had low level of awareness. This indicates that the knowledge gap has a negative impact on active participation and developing sense of belongingness.

Based on the findings it is also possible to conclude that insignificant number of higher education preparatory secondary school teachers involved in action research. Even the research findings were not applied in classrooms or schools. This implies that the teachers give less emphasis and effort to action research. Teachers considered action research as an extra load rather as part of their duty.

At this level teachers are expected to carry out action research to improve their teaching as well as students learning. But teachers who tried to conduct conventional or action research was mainly to fulfill their course requirement and for promotion. This indicates that the attention given to conduct action research was not to improve the teaching learning process rather for personal benefit.
The major hindering factors conducting action research were found as lack of training, lack of support and monitoring, work over load and shortage of time, lack of incentives, lack of interest and commitment. It is clear that each hindering factors are interrelated to each other and affect when it is present or absent.

**Recommendations:** The following recommendations are given based on the foregoing mentioned discussions and conclusions. It was found out that the implementation of action research was affected much by lack of attention and responsibility. Most of the time school principals, educational experts and officials spend on routine administrative activities and occasional issue rather than academic ones as that of action research. Therefore, educational management bodies (school principals, Woreda educational officials, department heads at zonal and regional level) should create conducive environment. For instance, providing the necessary reading materials, supporting including training, and developing and implementing feasible monitoring system. Organizing research unit from school level up to regional level; and assigning qualified and well experienced expert with clear responsibility has to be considered. Creating an environment to apply research findings in the classroom or school has to be given attention.

Further more teachers are more responsible to update themselves through reading and experience share. Universities also have the responsibilities to create a relationship and support secondary school teachers at least in facilitating and providing training on action research. Teachers have also consider action research as inseparable activity of their teaching and practice with the existing limited resource like stationeries.

As educators at each level, need to have room for seminars and workshops which gives chance to understand the status and problems of action research. Thus, frequent and Open discussion with teachers has to be arranged on how to improve action research participation. In addition, teachers who are involved in implementing action research have to be recognized. This might be in a form of certification, promotion, long term training opportunities, and others.

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The Role of Perceived Parental Control and Warmth on Female Adolescent Behavioral and Academic Outcomes: The Case of Debre Markos University

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Abstract

One of the population characteristics of developing countries is having less productive and more nonproductive population. The current work culture in Ethiopia encourages females to take part in indoor activities which are more consumable and males in outdoor activities which are more productive activities. Furthermore, numerous number of research results about female adolescents indicate that their access to higher education is low but their attrition rate is high (Tesera, 2009); their ability to exercise their rights and obligation is low; the ratio of HIV prevalence of males to females is 10: 12 (WHO, 2005). It was hypothesized during this research study that parental warmth and control that parents exercise on their daughters has significant effect in causing lower academic performance, assertiveness and higher HIV risk behaviors on the daughters. Therefore, this paper was an attempt to solve the following basic questions.

1) What is the effect of parental control and parental warmth on academic performance of female students?
2) What is the effect of parental control and parental warmth on assertiveness of female students?
3) What is the effect of parental control and parental warmth on HIV/AIDS risk behaviors of female students?

So as to solve the above basic questions, the researcher used descriptive survey method of research. Data were collected from female adolescent students of DMU during 2003 E.C academic year. About 186 students were selected out of a total of about 2000 female students. The main tool of data collection was questionnaire with both open ended and close ended questions. The contents of the questionnaire focus on the background information, assertiveness behavior, and academic performance, parenting style and HIV risk behaviors of the respondents. The collected data were analyzed by using correlations, stepwise linear regression. The result of the analysis has indicated that parental warmth has no significant effect on academic performance ($r=-112, n=180, p=.036$) and HIV risk behaviors of the respondents ($r=0.086, n=180, p=.250$). But, it has strong positive relation with assertiveness behavior of the respondents ($r=0.421, n=180, p=0.000$). On the other hand, parental control has negative effect on academic performance ($r=-0.171, n=178, p=.023$) and assertiveness behavior of the respondents ($r=0.453, n=177, p=.000$). But, it has positive relation with HIV risk behaviors HIV risk behaviors ($r=0.157, n=180, p=0.035$). It was also noted that assertiveness which is influenced by Parental control and parental warmth in turn, is associated with academic performance ($r=0.37, n=179, p=000$) and HIV risk behaviors ($r=-0.221, n=180, p=.003$) of female adolescents.

1. INTRODUCTION

Background of the Study: Nowadays, social researchers are working day and night to know the determinants of individual personality development of individuals. They want to know what determines individual behavioral traits such as aggressiveness, assertiveness, competence in academic areas and the like. Some are focusing on the role of heredity and others are focusing on the role of environment such as family interaction with their children. Since environmental
factors are controllable determinants of personality development, the researchers of this topic believes that environmental factors be given more emphasis. It is important to note that in the past, different styles of parenting were advocated by different theorists. Initially, the main issue regarding child rearing practices had been whether parents should employ restrictive or permissive child rearing practices. In the years between 1913 and 1910, which were the heyday of American behaviorism, child rearing experts regarded the infant as an object for systematic shaping and conditioning. Consequently, desirable social behavior could be attained if the child’s antisocial behaviors were always punished and never indulged. Thus, according to behaviorists and popular opinion of the time, restrictive methods in styles of parenting are by far better than permissive styles (Hetherington & Parke, 1979).

A shift toward a more permissive attitude in which the parent was advised to be concerned with the feelings and capabilities of the child emerged in the years between the early 1930s, until the mid-1960s. This shift was due in part to the influence of Freudian Psychology and its focus on the role of early deprivation and restrictions in the development of inhibitions that could serve as the foundation of many emotional problems. Additional influence toward permissive style also came from writings of humanistic psychologists (such as Abraham Maslow and Carl Rogers) and progressive educators such as John Dewey. These people believed that individuals have an innate capacity to realize their potential abilities if they are free to explore and develop in an open and accepting environment. But again since the mid-1960s the virtue of the authoritative style has been highly praised (Hetherington & Parke, 1979).

Parental responsiveness (also referred to as parental warmth or supportiveness) refers to "the extent to which parents intentionally foster individuality, self-regulation, and self-assertion by being attuned, supportive, and acquiescent to children’s special needs and demands" (Baumrind, 1991, p. 62). Parental demandingness (also referred to as behavioral control) refers to "the claims parents make on children to become integrated into the family whole, by their maturity demands, supervision, disciplinary efforts and willingness to confront the child who disobeys" (Baumrind, 1991, Maccoby & Martin, 1983).

Warm parents tend to use reasoning and explanation equity and this permits the child to internalize social rules and identify and discriminate situations in which a given behavior is appropriate (Hetherington & Parke, 1979). According to Hetherington & Parke, warmth and nurturance by parents are likely to be associated with security, low anxiety and high self-esteem. Studies also indicate that children who over-exposed to more acceptant child-rearing practices were found to be high achievers (Steinberg et al. 1989).

Furthermore, according to Maccoby (cited in Berk, 1991), children with nurturing and warm parents as opposed to those with more rejecting parents are less likely to show delinquent behavior in adolescence or criminal behavior in adulthood. On the other hand, some researchers believe that some degree of parental control is necessary if children are to develop into socially and intellectually competent individuals. However many investigators indicate that extreme of parental restrictiveness or permissiveness leads to deficient development (e.g. Hetherington & Parke, 1979).

In respect to the effect of parental control and warmth on academic performance, dominant numbers of research results indicate that authoritative parenting style where parental control is low and parental warmth is high is associated with better academic achievement of children since their high warmth encourages their children (Baumrind & Black, 1967). Those parents who are
authoritarian, indulgent, and neglectful, consciously or unconsciously (but presumably unconsciously), do not encourage their children to be independent and assertive (Sileshi, 1998; Dornbusch, 1987; Fraleigh, 1998). The results reveal that high level of misbehaviors is reported by children from neglectful, Indulgent and authoritarian homes. But, much of this work has been based on samples of white, European American families, and Western measures of parenting style.

Morrow and Wilson (1961) revealed that parents of high achievers gave children more praise and approval, showed more interest and understanding, were closer to their children and made their children feel more attached to the family, unlike parents of underachievers who were characterized as more domineering, over restrictive, and more punitive (in terms of both severity and frequency of punishment). Similar results were also reported by a study that employed observation to examine parent-child communication in families of low and high achievers (Nicassio, 1982). Generally, the above studies indicate that high achievers tend to have favorable home environment and supportive parental behavior while this is not the case for low achievers.

Steinberg and his associates (1989) has also revealed that youngsters who described their parents as liberal in granting psychological autonomy and more firm in controlling over their behavior showed greater increase in achievement than the youngsters who rated their parents as exercising less control and giving more autonomy. Though studies conducted in the Ethiopian context are rare, few studies that examined the relationship between academic performance and parenting generally revealed results that are consistent with the above studies.

Effective parenting is protective to HIV risk behaviors. In this respect, Griffin, 2002 has explored that effective parenting practices had a direct protective effect in terms of adolescent drug use. Parenting practices has significant on adolescent drug-related knowledge, attitudes and perceived norms in a structural equation model. Gilbert J. Botvin, also argues that by showing and increasing family bonding and communication, parenting skill training can decrease the risk of adolescent drug use (Kosterman et al., 1997; Dishion & Andrews, 1995; Werch et al., 1991; Klein & Swisher, 1983; Patterson, Chamberlain, & Reid, 1982). Correspondingly, poor parent-child communication and poor parental support are frequently associated with greater youth substance use (Anderson & Henry, 1994; Selnow, 1987; Wills & Cleary, 1996) and delinquency (Clark & Shields, 1997). Ralph J. DiClemente et al. 2001 have found that adolescents perceiving less parental control would more likely to test positive for a sexually transmitted disease. The authors have also found that such adolescents report not using a condom at last sexual intercourse, have multiple sexual partners in the past six months, have risky sex partners, have new sex partner in the past 30 days, and not use any contraception during the last sexual intercourse episode and have history of substance abuse.

Finally, there are evidences that parental warmth and control would have effect on assertiveness behavior of children and adolescents. Many studies have also shown that parental inconsistency and conflict are linked to maladjustment in children, especially to aggression and delinquency (Morgan, King, Weisz & Sloper, 1986). In one study, parent’s destructiveness and refusal to grant sufficient independence were associated with dependent and passive behavior. Children whose parents did not permit them to explore the environment who placed restrictions upon their initiative, and who expected a high level of conscience development tended to be stereotyped in their thinking and dependent while children whose parents encourage independence were more likely to be independent, active, and non-conforming (Baumrind & Black, 1967). Others
(e.g. Fischer & Lazerson, 1984) also believe that children of authoritarian-restrictive parents are likely to be dependent and submissive.

**Statement of the Problem:** Currently, ample number of research results indicate that the number of female students joining higher institution is low and their attrition rate is high (Tesera, et al, 2009); their ability to exercise their rights and obligation is low; the ratio of HIV prevalence of males to females is 10:12 (WHO, 2005). The researcher here has assumed that parental warmth and control that parents exercise on their daughters has significant effect in causing lower academic performance, assertiveness and higher HIV risk behaviors on the daughters.

One of the population characteristics of developing countries is having less productive and more nonproductive population. For a solution to this problem, the current work culture in Ethiopia encourages females to participate indoor activities, which are more consumable and males in outdoor activities which are more productive activities. But, increment of productive population requires helping females to take part in outdoor and productive activities.

One of the reasons why females are not taking part in outdoor activities like their male counterparts is not having adequate assertiveness skill. They are not capable enough to independently decide on their own issues, which also disposes them various HIV/AIDS risk behaviors and failure in their academic performances.

The researcher believes that assertiveness skill of females in particular and their HIV risk behaviors as well as their inadequacy in academic skills compared to their male counterparts in general are a result of parenting practices by their families. Thus, parenting practices are presumed to have various effects on the psychological, social, academic competence and other risk behaviors of children. That is female adolescents are facing different problems not only because of their developmental stage, but also because of their early childhood experiences and the parenting style they received from their parents. Among the major problems that female adolescents face are HIV/AIDS risk behaviors such as multiple sex, unsafe sex, unassertiveness and weak academic performance compared to males. Therefore, this paper would be an attempt to solve the following basic questions.

1. What is the effect of parental control and parental warmth on academic performance of female students?

2. What is the effect of parental control and parental warmth on Assertiveness of female students?

3. What is the effect of parental control and parental warmth on HIV/AIDS risk behaviors of female students?

**Significance of the Study**

1. The result of the study could be a useful source of information for counselors, parents, teachers and other concerned bodies who are directly engaged in shaping child behaviors.

2. Furthermore, it could be a valuable source of information for higher institutions, Female and Child Affairs Bureaux, NGOs, as well as other governmental organizations to develop HIV/AIDS and drug prevention programs/policies and to provide equal opportunity for females as compared to males in all sectors.

3. It can also be used as a bench mark for further research.
The Scope of the Study: The research was aimed to explore the effect of parental control and parental warmth on the assertiveness behavior, HIV Risk behavior and academic performance of female adolescents in higher educational level. Therefore, it is delimited to female students joining higher education. That is the findings of the research are applicable only for female students joining university. It is not sure whether it applies for students in high school and elementary levels. To be sure on such issues, other researches need to be conducted.

2. RESEARCH METHODS

Research Design: To resolve the basic questions aforementioned in the first chapter, a quantitative descriptive survey method with analysis of Variance and multiple regressions as well as correlations were used.

Participants: The research was conducted on female regular adolescents in DMU. The participants were included from all colleges and departments as well as from all levels of the same academic year, 2003 E.C.

Sample Size and Sampling Technique: Out of the total population of about 2,000 students, 180 students were selected randomly based on availability from the population. The reason why the researcher has selected participants based on their availability was assuming that the problem equally exists in all faculties and departments. Furthermore, random availability sampling was used because it was simple to apply and time saving for the researcher with no negative effect on the research result of this specific research.

Data Collection Tools: Primary data was collected from the participants by using questionnaire. The questionnaire has six parts. The first part of the questionnaire is intended to collect information about the background of the respondents whereas; the second part of the questionnaire contains items intended to collect information about the background information of the parents of the respondents like occupation and educational level of the parents. The third part of the questionnaire contains eight Likert scale items regarding about the students' relation with their parents. Similarly, the fourth part contains Liket scaled eight items intended to measure HIV risk behavior of the respondents. Finally, fifth and sixth parts of the questionnaire have a five point scale which is used to determine the parenting style and assertiveness behavior of the participants respectively.

Data Analysis Technique: The data collected by the questionnaire analyzed by using SPSS 14.00 to determine the effect of parenting style on assertiveness, academic performance and sexual behavior of respondents. Statistical techniques such as Pearson correlation analysis, ANOVA as well as multiple regression analysis were employed at a significance level of .05 so as to determine the degree and direction of relationship between the independent and dependent variables. The analysis is geared towards providing answers for the basic questions raised by the researcher.

Research Variables: The main independent variable was females' perception of parental warmth and control. It was measured by the five point scale consisting of twenty items. The first ten items of the items of parenting style measures are focusing on the level of control whereas the rest ten are focusing on the level of warmth or support.

There were three main sets of the dependent variables whose effect is observed: Assertiveness, HIV/AIDS risk behaviors and academic performance of the students. Assertiveness and HIV/AIDS risk behaviors of the students were measured by five point Likert scale. But, the
academic performance of the students was measured by the school CGPA (both grade 10 and university GPA).

3. RESULTS

The Role of Parental Control and Warmth on Academic Performance: Parenting style is expressed in relation to two aspects: parental warmth and parental control. The first is about the degree of emotional bonding that parents have with their children whereas; the later is about the degree of punishment that parents implement to shape the child's behaviors. To see the effect of the two elements of parenting style on academic performance of the students, the researcher has applied Pearson correlation analysis as shown in table 3.1.

Table 3.1: Pearson correlation between parenting style and academic performance

<table>
<thead>
<tr>
<th>Parental Warmth</th>
<th>University CGPA</th>
<th>GPA Grade 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-.112</td>
<td>.074</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.136</td>
<td>.323</td>
</tr>
<tr>
<td>N</td>
<td>178</td>
<td>179</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parental Control</th>
<th>University CGPA</th>
<th>GPA Grade 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-.171(*)&amp;</td>
<td>-.342(**)</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.023</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>178</td>
<td>179</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

The table above reveals that the coefficient of correlation between parental warmth and University CGPA is found to be insignificant at .05 level of significance and at a sample size of 178 (r = -0.112, df=178, p=0.136). Similarly, there is no statistically significant correlation between Parental Warmth and Grade 10 GPA at the 0.05 level of significance with a sample size of 179 (r = 0.074, df=179, p=0.323).

On the other hand, the coefficient of correlation between parental control and University CGPA is found to be negative (r = -0.171, df=178, p=0.023). Likewise, there is negative correlation between parental control and Grade 10 GPA (r = -0.342, df=179, p=0.000).

Table 3.2: The linear regression summary of parental control versus university CGPA

Similar to the correlation analysis, the linear regression analysis also indicates that parental control contributes a variance share of 2.9 percent (R squared = 0.029, Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100)) which is statistically significant but, weak share of variance.
The linear regression analysis above indicates the parental control contributes about 1.7 percent of share of variance to the dependent variable, Grade 10 GPA (Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100)).

Table 3.3: The linear regression summary of parental control versus grade 10 GPA

The Role of Parental Control and Warmth on Assertiveness

It was hypothesized that the degree of warmth and control that parents exert on their children could have impact on assertiveness of children. To test the hypothesis, Pearson’s correlation coefficient has been done. The result of the analysis is shown in the table below.

Table 3.4: Correlations among parental control, warmth, and assertiveness
As indicated in Table 3.4 above, there is a relatively strong positive correlation ($r=0.421$) between Parental Warmth and assertiveness behavior of children ($r=0.421$, df=177, $p=.000$). But, the relation between Parental Control and assertiveness is negative and relatively very strong ($r=-0.453$, df=177, $p=.000$). The same result is obtained from regression analysis of assertiveness versus Parental Warmth and parental control.

Table 3.5: The linear regression summary of parental control and warmth versus assertiveness

<table>
<thead>
<tr>
<th>Variables Entered/Removed^a</th>
<th>Variables Entered</th>
<th>Variables Removed</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Parental Control</td>
<td></td>
<td></td>
<td>Stepwise (Criteria: Probability-of-F-to-enter &lt;= .050, Probability-of-F-to-remove &gt;= .100).</td>
</tr>
<tr>
<td>2 Parental Warmth</td>
<td></td>
<td></td>
<td>Stepwise (Criteria: Probability-of-F-to-enter &lt;= .050, Probability-of-F-to-remove &gt;= .100).</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Assertiveness  
   b. R Square of both Independent variables = .270  
   c. Predictors: (Constant), Parental Control, Parental Warmth

To clarify the effect of parental control and parental warmth on the assertiveness behavior of children, a linear regression analysis was conducted. The result has indicated that the share of variance contributed by both Parental Control and parental warmth to the Assertiveness Behavior of the respondents is 0.270 ($R=0.270$, Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100)).

The Role of Parental Control and Warmth on HIV Risk Behaviors

The null hypothesis here was that parental Warmth and Parental Control have a significant effect on development of HIV Risk behaviors of the students. To test the hypothesis, Pearson's correlation coefficient was computed. The result has indicated that the coefficient of correlation between parental warmth and HIV Risk behaviors is statistically insignificant at 0.05 level of significance ($r = -0.086$, $p=.250$).

Table 3.6: The role of parental warmth and parental control on HIV risk behaviors

<table>
<thead>
<tr>
<th>HIV Behaviors</th>
<th>Pearson Correlation</th>
<th>Parental Warmth</th>
<th>Parental Control</th>
<th>Assertiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk</td>
<td>-0.086</td>
<td>.157(*)</td>
<td>-.221**</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.250</td>
<td>.035</td>
<td>.003</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>180</td>
<td>180</td>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

On the other hand, Pearson's coefficient of correlation between parental control and HIV Risk Behaviors is 0.157 which is relatively weak but, statistically significant at 0.05 level of
significance \((r=0.157, \ df=180, p=0.035)\). Similar to the Pearson’s coefficient of correlation, the linear regression model also revealed that the share of variance contributed by the variable, Parental control, to the dependent variable, HIV risk behaviors is 2.5 percent \((R \ squared = .025, \ \text{Stepwise (Criteria: Probability-of-F-to-enter} \leq .050, \ \text{Probability-of-F-to-remove} \geq .100)\). But, it shows that the R square between the two variables is relatively low \((R=0.025)\).

Table 3.7: The effect of parental control on HIV risk behaviors of the respondents

<table>
<thead>
<tr>
<th>Variables Entered/Removed*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>1 Parental Control</td>
</tr>
</tbody>
</table>

4. DISCUSSION

Different authors have different view about development of our temperaments such as assertiveness, academic achievement and HIV Risk behaviors. Nowadays, so many authors like Ana Roe (1997) explained in their theories that the way parents interact with their children determines major personality constructs of children. This research is also an attempt to verify the effect of Parental warmth and parental control behaviors on assertiveness, HIV Risk behaviors and academic performance of their daughters at college and university level.

The Relationship between Parenting and Academic Performance: It has been found that the coefficient of correlation between Parental Warmth and Grade 10 GPA is 0.074 which is statistically insignificant at the 0.05 level of significance with a sample size of 179. Similarly, the correlation between Parental Warmth and University CGPA is found to be \(-0.112\) which is also statistically insignificant at the 0.05 level of significance at a sample size of 178.

On the other hand, the coefficient of correlation between parental control and University CGPA is found to be negative \((r = -0.171, \ df=178, p=0.023)\) which is statistically significant at 0.05 level of significance and 178 degree of freedom. Likewise, there is statistically significant and negative relation between parental control and Grade 10 GPA \((r = -0.342, \ df=179, p=0.000)\).

It is found in the analysis that the independent variable, Parental Control has negative effect on the dependent variables, University CGPA \((F=5.276, \ df=1.176, p=0.023)\). Similarly, the same independent variable has negative effect on Grade 10 GPA \((F=22.856, \ df=1,176, p=.000)\). This result supports the view of humanistic psychologists who emphasize on the need to be humane and respectful for children instead of strict control and punishment to shape their personality like assertiveness and HIV risk behaviors. Parental control has significant effect on academic performance of the students while parental warmth has not. This may due the fact that the negative effect of punishment is greater than the positive psychological effect of parental warmth to shape child behaviors. It is usual that people easily memorize the weakness of the others than the strengths.
The Relationship between Assertiveness and Parenting: There is relatively strong positive correlation ($r=0.421$) between parental warmth and assertiveness behavior of children ($r=0.421$, $df=177$, $p=.000$). But, the relation between parental control and assertiveness is negative and relatively very strong ($r=-.453$, $df=177$, $p=.000$). The same result is obtained from regression analysis of assertiveness versus Parental Warmth and parental control ($F=33.204$, $df=1,178$, $p=.000$).

The Relation between HIV Risk Behaviors: It has been found that the coefficient of correlation between parental warmth and HIV risk behavior is -0.086, which is very weak and statistically insignificant at 0.05 level of significance. On the other hand, Pearson’s coefficient of correlation between parental control and HIV Risk Behaviors is 0.157 which is relatively weak but, statistically significant at 0.05 level of significance ($r=0.157$, $df=180$, $p=0.035$). The same result is revealed from the linear regression model ($F=4.526$, $df=1,178$, $p=0.023$). More control and monitoring of children may reduce their HIV risk behaviors at their early ages. But, at later ages, when children are independent from the control of their parent, they tend to try behaviors that they were inhibited from at their early ages as a result of regression according to Sigmund Freud. This is because control reduces gratification of needs at appropriate stages in life.

5. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Parental control has statistically significant negative effect on academic performance of female students while Parental warmth insignificantly associated.
2. Parental warmth has positive and significant effect on development of assertive behavior whereas; parental control negatively affects assertive behavior of female students.
3. Furthermore, parental control significantly affects HIV risk behaviors of female adolescents. It positively affects HIV risk behaviors. But, parental warmth has no statistically significant effect on HIV risk behaviors of female students.

Recommendations: The overall result of the research indicates that Parental Control is a major determinant factor of various behaviors like assertiveness, HIV risk behaviors and academic performance of the respondents. That is as parents are more and more controlling to their daughters, unassertiveness behavior and HIV risk behaviors of the daughters tend to increase making them more and more unassertive and disposed to HIV risk behaviors. Besides, it lessens the academic performance of females. Therefore, the government should aware off the fact and should design a structure in schools where training is given to parents on how to manage their children particularly, their daughters to make them more and more assertive and resistant to HIV risk behaviors.

Furthermore, family counseling programs in public media should emphasize on providing awareness to the public on how to nurture children. The media should disseminate such findings to the public and should create awareness to the parents.

Since the socio economic variables such as family income and type of occupation are influencing the level of parental control and warmth that parents are exercising on their daughters, income-generating activities have to be encouraged to reduce control of parents on their daughters due to economic disparities.
REFERENCES


PART TWO: AGRICULTURE AND ENVIRONMENT

Struggling for Food and Securing Household Income through Dairy Production: The Case of Urban and Peri-urban Areas of Northwest Ethiopian Highlands

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Abstract

The research was designed to evaluate the challenges and opportunities of urban and peri-urban dairy production in contributing to the household income and food self-sufficiency of the producers and providing balanced food and job opportunity in the Northwest Ethiopia. A total of 256 smallholder dairy farms were selected for data collection and of these 54 dairy farms were monitored to get some quantitative data. The relative importance of different income sources showed a significantly (p<0.001) different pattern for urban and peri-urban areas. In both areas, the contribution of dairying to the total household income was at the same level which was 40 and 42% in urban and peri-urban areas, respectively. In peri-urban areas the second most important income source are non-dairy farm activities, whereas in urban areas off-farm activities such as trading and civil work are much more important as additional source. Scant access to technical knowledge, veterinary services and market sites are the most important factors limiting the potential of urban and peri-urban dairy production in contributing to food security and livelihoods of the population. Therefore, to enhance dairy production and marketing, milk co-operatives that could be able to market larger volumes and sufficiently reduce transaction costs shall be supported by governmental and non-governmental organizations through providing technical support and infrastructural development. Moreover, as market is the driving force to the production and marketing of milk, establishing milk processing plants in the area may be an option as a permanent market outlet for both urban and peri-urban dairy producers.

Keywords: marketing, processing, urban dairy production

1. INTRODUCTION

Today urbanization is advancing at a much more rapid rate than ever. Sub-Saharan Africa is approaching a demographic inflection point as the numbers of new urban residents are projected to rise sharply by over 300 million between 2000 and 2030 which is more than twice the rural population increment (World Bank, 2005). Meeting the demand for food in general and for protein in particular of these people will present an enormous challenge to African farmers and the governments for whom welfare of urban consumers is becoming a major political concern. Urgent attention is required to provide food for this growing demand. Much of the increased demand for dairy products will be concentrated in urban and peri-urban areas. Hence, development of the production and productivity of the livestock sector can play a vital role in fulfilling the growing demand for protein (Azage and Alemu, 1998).

In Ethiopia urban and peri-urban dairying constitutes an important sub-sector of the agricultural production system. Urban and peri-urban dairy production systems involve production, processing and marketing of milk and milk products that are channeled to urban centers. It plays a vital role in the lives of the urban and peri-urban poor by providing a source of subsistence through household nutrition (milk and meat), supplementary income and generating employment opportunity.
However, urban and peri-urban dairy production systems in Ethiopia are constrained by several factors such as technical, socio-economic and institutional factors (Fekadu, 1994). Hence, in order to attain sustainable livestock development, careful planning is required for the generation of appropriate and demand driven technologies. Therefore, it is justifiable to assess and recommend some technical issues for smallholder dairy farmers.

Hence, this study was conducted with the objective of assess the challenges and opportunities of dairy production system in contributing to the household food self-sufficiency and income source in the milk shed areas of the Northwest Ethiopian highlands.

2. MATERIALS AND METHODS

Study Areas and Data Collection: The study was conducted between July 2006 and March 2007 in order to characterize the level of milk production and utilization of the urban and peri-urban dairy systems in the milk shed areas (Bahir Dar and Gondar) of northwestern Ethiopian highlands. The study areas are located on an elevated plateau ranging from 1720 to 3000 m above sea level. The average annual temperature and rainfall range from 10 to 30 °C and from 1000 to 1500 mm, respectively (NMSA, 2008).

In the first step, a rapid survey was conducted at district level with the DoARD Offices in order to identify dairy farmers who keep different cattle breeds and represent different farming systems and milk production potentials in varying agro-ecological zones; information was collected from 19 districts. Based on this, a total of 256 dairy farmers (57 from urban and 199 from peri-urban areas), representing 17 districts, were chosen randomly. After a pre-test of the questionnaire, farmers were individually interviewed. The questionnaire consisted of open and closed questions, all of which were translated into the local language. It was designed in a way to obtain information on milk production and utilization, including types of milk products and marketing systems. Moreover, to verify survey information like the amount of milk production and utilization, 54 farmers out of 256 respondents were selected randomly and monitored once per season. For seasonal classification, the amount of rainfall and temperature distribution information from NMSA (2008) was used and the year was divided into two broad categories, the dry season (October to April) and the wet season (May to September). With the objective of evaluating the contribution of milk cooperatives (producers) as option for market entry point for smallholder dairy farmers, a semi-structured questionnaire was also developed and data was collected from a total of 13 milk cooperatives or producer groups found within 17 districts covered in the study areas.

Data Analysis: Location (urban and peri-urban) and farming system were used as fixed factors for most dependent variables such as family size and farm size, herd composition and herd structure. Except for cattle number, preliminary analysis showed that interaction effects of the fixed factors were not significant and hence were excluded from the model.

Data were analyzed using General Linear Model (GLM) procedures of the Statistical Analysis System (SAS, 2002). The model was Yi,jkl = i + Li + Fj + Bk + LFi,j + âijkl, where, Yi,jkl is the dependent variable, i is the overall mean, Li is the fixed effect of the location i, j=urban, peri-urban; Fj is the fixed effect of farming system j, j=livestock, crop-livestock; Bk is the fixed effect of the breed group k, k=local (Zebu type), local x Holstein Friesian; LFi,j is the interaction of location and farming system and âijkl is the random error. Turkey’s standardized range test was used for comparisons of means.
Chi-square-test was used to determine differences in percent frequency of ordinal data. The level of significance for more than two factor levels was analyzed with the Bonferroni-Holm test. Correlation analysis was done to determine the degree of relationship between random variables such as family size and land size. For all analysis, the level of significance was set at alpha of 0.05.

3. RESULTS AND DISCUSSION

**Household Characteristics:** The average family size per household for different locations and farming systems is presented in Table 2. Family size was almost the same for both farming systems, but peri-urban farms had significantly (p<0.05) more household members than urban farms. The significantly greater family size per household in peri-urban farms than in urban farms (Table 2) is likely to influence labor capacity available for crop and livestock production. Hence, having more family members may be considered as an asset and a factor which increases social security in times of retirement. This might be one reason among others for the greater household size in peri-urban areas where the workload (in addition to dairying) for crop land preparation, manual weeding and harvesting of food is higher. This is in agreement with the report of ESAP (2002) for the case of Eastern Ethiopia.

This study demonstrated that dairy production does not only provide benefits for owners, but also is one option for employment. Assessment of the hired labor availability indicated that all of the urban farmers used hired labor, while only 85.8% of the peri-urban farmers employed people. Out of the urban farmers hiring labor, the majority (70.2%) employed laborer permanently, whereas only 54.7% of the peri-urban farmers did so. Generally, in all (256) dairy farmers interviewed, about 342 males and 90 females were hired laborers (Table 3). The majority (84%) of the external laborers came from rural areas while 16% were hired from towns. Similar results were reported by Azage et al (2006) who concluded that urban and peri-urban dairy production systems could contribute to overall development through income and employment generation.

In urban farms, the high percentage of involvement of hired labor (35%) was probably related to the more frequent engagement of both husbands and wives in off-farm activities such as civil work and trading than in peri-urban farms.

**Table 1: Number and proportion of farmers engaged in different farming systems by location**

<table>
<thead>
<tr>
<th>Locations</th>
<th>Farming systems</th>
<th>Livestock only</th>
<th>Number of farmers</th>
<th>%</th>
<th>Crop-livestock</th>
<th>Number of farmers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
<td>51</td>
<td>89.5</td>
<td>6</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>Peri-urban</td>
<td></td>
<td></td>
<td>83</td>
<td>41.7</td>
<td>116</td>
<td>58.3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>134</td>
<td>52.3</td>
<td>122</td>
<td>47.7</td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Family size by location and farming system

<table>
<thead>
<tr>
<th>Factors</th>
<th>N</th>
<th>Family size</th>
<th>Root MSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>52</td>
<td>6.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Peri-urban</td>
<td>197</td>
<td>7.1</td>
<td></td>
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<tr>
<td>Farming systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock</td>
<td>131</td>
<td>6.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Crop-livestock</td>
<td>118</td>
<td>7.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Number of casual and permanently hired laborers of 256 dairy farms

<table>
<thead>
<tr>
<th>Description</th>
<th>Casual</th>
<th>Permanent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of persons employed</td>
<td>Male 222</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>Female 5</td>
<td>85</td>
</tr>
</tbody>
</table>

Herd Size and Management: The average numbers of livestock owned by 256 farmers are presented in Table 3. However, the total number of cattle, local (Zebu type) and local × Holstein Friesian crossbred cows, heifers and calves owned by the respondent was significantly influenced by an interaction of location and farming system (Table 4). In urban crop-livestock farms (mainly composed of governmental and non-governmental large farms), the total number of cattle per farm was higher (34) than for livestock farms (9.7). Similarly for peri-urban sites, the herd size was greater for crop-livestock farms (9.6 as compared to 6.5 for livestock farms). Local cows are mainly kept on peri-urban crop-livestock farms, where they constitute more than half of the cow population, while in the other locations and farming systems mainly crossbred cows are used.

One of the major problems in urban dairying was a lack of sufficient space for the dairy cows. The majority of the urban producers (80.7%) were observed keeping dairy cattle in confined places of the same compound in which the household members were living. Among others, this practice might bear some hygienic risks.
Table 4: Least-squares means for livestock herd size and composition (N=256)

<table>
<thead>
<tr>
<th>Livestock species</th>
<th>Locations</th>
<th>Range</th>
<th>Root MSE</th>
<th>P location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Peri-urban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>21.8</td>
<td>8.1</td>
<td>1-92</td>
<td>7.9</td>
</tr>
<tr>
<td>Sheep</td>
<td>1.6</td>
<td>3.1</td>
<td>0-65</td>
<td>7.2</td>
</tr>
<tr>
<td>Goats</td>
<td>0.02</td>
<td>0.4</td>
<td>0-20</td>
<td>1.8</td>
</tr>
<tr>
<td>Horses</td>
<td>0.1</td>
<td>0.3</td>
<td>0-5</td>
<td>0.7</td>
</tr>
<tr>
<td>Donkeys</td>
<td>0.1</td>
<td>0.4</td>
<td>0-8</td>
<td>0.9</td>
</tr>
<tr>
<td>Mules</td>
<td>0.1</td>
<td>0.1</td>
<td>0-3</td>
<td>0.3</td>
</tr>
<tr>
<td>Total</td>
<td>23.8</td>
<td>12.4</td>
<td>0-92</td>
<td>11.9</td>
</tr>
</tbody>
</table>

**Income Sources and Farm Activities:** Comparable to the report of Thys et al. (2005), fetching income was the main argument for keeping livestock in this study. In both study areas similar levels of contribution of dairying to the total household income were observed (Table 5). Comparable results were reported in various studies for the Ethiopian highlands in which dairying generated 34% of the total household income of farmers in the Holleta area (Mohamed et al., 2003) and 48.9% of the urban farmers of Southern Ethiopia (Sintayehu et al., 2008). However, the results from Sintayehu et al. (2008) about the contribution of dairying to the total household income in rural areas of Ethiopia was much lower (1.6%) than the current result for crop-livestock farmers in peri-urban areas (42%). Such differences might have resulted from variation in herd size, productivity of dairy cattle, and level of income from other sources, farm size and access to input services (particularly artificial insemination, health, training, and credit services).

The contribution of non-dairy agricultural activities to the household income was higher in peri-urban than in urban farms (26% as compared to 3%; Table 5). The reason for a greater contribution of non-dairy farming to family income in peri-urban areas has to be seen in connection with a 10-times greater farm size in peri-urban farms (3.1 ha) than urban farms (0.3 ha) and hence with the consequence of higher proportion of crop farmers (58.3%) as compared to urban areas. A consequence of the low farm size in urban areas is the substantial percentage of backyard dairy farmers without access to agricultural land (70.2%). However, the lives of many peri-urban farmers mainly depend on agriculture and the government had given them more land as compared to urban farmers. In Ethiopia, land is mainly distributed to farmers on the basis of their family size. In this study, a positive correlation (r=0.23, p<0.001) between family size and farm size was observed. This is supported by the review report of Getachew et al. (1993) and Kelay (2002) who stated that, since the land reform declaration of 1975, land was allocated to individual farmers of the peasant associations depending on family size, fertility of the land, the number of members and the total land area available within a peasant association; whereas in urban areas, off-farm activities such as trading and civil work were much more important as additional source.
Table 5: Proportion (%) of different income sources by location in 256 dairy farms

<table>
<thead>
<tr>
<th>Sources of income</th>
<th>Proportion (%) of income by location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban (%)</td>
</tr>
<tr>
<td>Dairy</td>
<td>40</td>
</tr>
<tr>
<td>Non-dairy agriculture</td>
<td>3</td>
</tr>
<tr>
<td>Off-farm activities</td>
<td>57</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Milk Production and Utilization: In the study areas, the total annual milk produce was estimated to be about 1.4 million liters from 256 farms. By production system, it was about 0.6 and 0.8 million liters from 57 and 199 farms of urban and peri-urban dairy systems, respectively. To verify the information about the milk utilization collected during the survey (Table 6), actual measurements of the amount of milk produced, sold, bucket fed to calves, home consumed and processed were done.

The monitoring data revealed that significantly (p<0.001) more milk was produced by urban than peri-urban farmers (43 and 14.1 liters/household/day, respectively). The higher daily milk production per farm in urban than peri-urban farms was mostly due to the presence of a greater number of crossbred (local zebu type x Holstein Friesian) cows in the first system (11 TLU) than the second systems (1.9 TLU). A similar conclusion was given by Yoseph et al. (2003) and Sintayehu et al. (2008) for the cases of Addis Ababa and Southern Ethiopian highlands. From the survey data, a comparison of the two systems showed that the proportion of milk sold was significantly (p<0.001) higher in urban system than peri-urban system (47% versus 21%), while the opposite was true for the proportion of milk processed (15% versus 25%; Table 5). For urban farmers, the relatively high proportion of milk sale probably was a result of access to a better market which might be related to the increasing urbanization (Azage and Alemu, 1998; Anthony, 2002). The survey data analysis showed that in the peri-urban farms a significantly (p<0.05) higher proportion of milk was consumed at home as compared to urban farms (51 versus 31%). Comparable results (8.2 and 4.9% for urban and peri-urban areas, respectively) were reported by Anthony (2002) who studied the urban and peri-urban areas of Awassa, southern Ethiopia. This source also confirms the higher rate of home consumption of milk on peri-urban (41.3%) as compared to the urban farms (10%).
Table 6: Proportion (%) of milk utilization in 256 dairy farms in the North western Ethiopian highlands (survey results)

<table>
<thead>
<tr>
<th>Milk utilization (%)</th>
<th>Urban</th>
<th>Peri-urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home consumed</td>
<td>31</td>
<td>50</td>
</tr>
<tr>
<td>Processed</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Sold</td>
<td>47</td>
<td>21</td>
</tr>
<tr>
<td>Bucket fed for calves</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Marketable Dairy Products and Price Determinants: Like in most parts of the Ethiopian highlands, mainly raw milk, butter and ghee were marketed by the primary dairy producers. Furthermore, 100, 33, 89 and 78% of the milk cooperatives and other producer groups were selling traditional butter, cheese, skim milk and yoghurt, respectively. The average amount of milk and milk products sold per milk cooperative or other producer group is shown in Table 7. In the urban system it was not common to sell butter (7% of producers); while about 42% of the peri-urban farmers did so. In the urban system, only one NGO farm produced and sold hard cheese; about 4.5% of peri-urban farmers marketed cottage cheese. Factors affecting the prices of milk and dairy products included season, fasting and non-fasting days, and access to urban sites; to some extent the quality and sources of dairy products also influenced their price. The price of dairy products was affected by the totally 250 fasting days per year practiced by the followers of the Ethiopian Orthodox Church in which these refrain from eating food of animal origin.

Table 7: Amount of milk products sold by milk cooperatives and other producer groups

<table>
<thead>
<tr>
<th>Types of products</th>
<th>Average amount sold/day/cooperatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheese (kg)</td>
<td>18</td>
</tr>
<tr>
<td>Butter (kg)</td>
<td>7</td>
</tr>
<tr>
<td>Yoghurt (liter)</td>
<td>22</td>
</tr>
<tr>
<td>Buttermilk (liter)</td>
<td>8</td>
</tr>
</tbody>
</table>

In the urban system, the average daily fresh whole milk sale was significantly (p<0.001) higher (50.6 liter) than in the peri-urban production system (8.8 liter). The price of fresh whole milk per liter was significantly (p<0.01) higher for urban than for peri-urban producers (2.4 versus 2.0 Ethiopian Birr (i.e. 0.28 versus 0.24 USD)). Furthermore, the amount of milk sold was significantly (p<0.05) higher during the wet season when cows produced relatively more milk and on non-fasting days as compared to the dry season and fasting days. Related to this, significantly (p<0.01) higher prices were reported for dry and non-fasting periods as compared to
wet and fasting periods (2.4 versus 2.1 Birr, i.e. 0.28 versus 0.25 USD per liter). Fresh milk could not be kept for a long time before consumed.

As a result, dairy producers living distant from urban centers could fetch a relatively lower selling price than farmers in or close to urban centers. This view is supported by Sintayehu et al. (2008) who stated that the distance from market sites (mainly to urban centers) had a major prohibiting effect on farmers from selling whole fresh milk to urban consumers. The current findings are also in line with those of Yousuf Kurtu (2003) who found that dairy producers living far from the urban centers do not deliver milk to the main regional town (Harar), because of the long distance involved and the high transaction costs.

In general, compared with the world, costs of milk production in Ethiopia are low (Staal, 1997), but high transactions costs for households and processors most likely prevent from a potential market entry (Holloway, et al., 2000). In the tropics, the existence of relatively high transaction costs coupled with perishable nature of milk play a central role in limiting dairy production and marketing (Staal et al., 1997). He further stated that under such conditions, milk co-operatives have an advantage as they are able to market larger volumes and sufficiently reduce transaction costs. This underlines the importance of enhancing dairy production and marketing in a coordinated way. Supporting milk cooperatives by provision of technical and infrastructural support may therefore be a specifically efficient for increasing the income of farmers and for providing consumers with more high-quality dairy products.

The amount of milk put on the market was significantly lower during the dry season. This is likely due to a depressed milk yield of cows as a result of feed shortage. The effect of this reduced market supply plus the occurrence of a period with less fasting days resulted in significantly higher market prices for milk and butter. Yousuf Kurtu (2003) and Sintayehu et al. (2008) derived suggestions related to this specific market situation for the Eastern and Southern parts of Ethiopia. In times of low demand for raw milk, farmers were strategically processing of milk into butter and cottage cheese to sale in times of better market. A similar result was drawn by Sintayehu et al. (2008). As the traditional butter and cottage cheese still contain high moisture and do not stay long, the producers frequently processed them further into ghee and Metata Ayib.

4. CONCLUSIONS

From the data presented here, it is concluded that urban farmers tend to specialize on dairy production which forms the second most important source of family income. This specialization of urban dairy producers includes the more frequent use of crossbred cows.

The great potential of urban and peri-urban dairy production for contribution to food security of the population, to family income, but also as a job opportunity will be better realized if current deficiencies in the access to services such as the transfer of technical knowledge, artificial insemination, veterinary and credit services are resolved. Limitations in the access both to agricultural land (especially for urban producers) and market sites (for peri-urban farmers) are also likely to hamper the development of this sector and need to be addressed by specific policy schemes.

Peri-urban producers produce and market less milk per day as compared to urban producers. Patterns of utilization of the produced milk are also different between production systems. Direct delivery to the nearby consumers is the most important primary milk outlet for producers of both systems, followed by retailers and milk cooperatives for the urban and the peri-urban system,
respectively. Market prices are influenced by season and fasting periods of the Ethiopian Orthodox Church. The coping strategies for producers include focusing on milk processing and selling the processed products at times of higher prices. Relatively high marketing costs further complicate the producers' economic situation. The development of innovative organizational structures such as cooperatives and other forms of producer groups, and the improvement of infrastructure such as transport, milk collection and milk processing units of a suitable capacity will help to increase the number of marketing options available to smallholder farmers.

REFERENCES


Effects of Supplementation with Noug Seedcake, Wheat Bran and their Mixtures on Feed Intake, Digestibility and Live Weight Change of Washera Sheep Fed Urea Treated Finger Millet Straw

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Abstract

The experiment was conducted to evaluate the effect of supplementation with noug seedcake (NSC), wheat bran (WB) and their mixtures on feed intake, digestibility and live weight change of growing lambs, and to assess economic benefits of supplementation. Twenty five growing Washera lambs with initial live weight of 17.8 ±1.72 (mean ± SD) in feeding trial were used. The lambs were blocked based on their initial live weight and randomly assigned to one of the five treatments, giving five animals per treatment. The treatments consisted of feeding of sole urea treated finger millet straw as control (T1) and supplementation of the basal diet with mixtures of NSC & WB at 100:0, 70:30, 30:70 and 0:100% for T2, T3, T4 and T5, respectively. The level of supplementation was 300 g/d on dry matter (DM) bases. Supplementation of NSC, WB and their mixtures significantly increased (P<0.001) the intakes of total DM (743-843 g/d) and total CP (99-134.34 g/d) when compared to total DMI (589.49 g/d) and CPI (49.4 g/d) of unsupplemented lambs. Unsupplemented lambs consumed significantly higher (P<0.001) urea treated millet straw DM (589.49 g/d) as compared to the supplemented treatments (443-543 g/d).

Supplementation also improved (P<0.001) the apparent digestibility of DM, OM, CP NDF, and ADF. Supplementation of urea treated millet straw with concentrates (T2-T5) promoted higher (P<0.001) daily weight gain which ranged b/n 50.2-71.3 g/day. Among the supplemented treatments, lambs supplemented with the higher proportion of WB (70%) in T4 and sole WB (100%) in T5 gained more weight (P<0.05) than the lambs in T2 and T3. Based on partial budget analysis, supplementation of concentrate mixtures at (70% WB + 30%NSC) (T4) could be recommended as profitable for producers with no capital limitation. However, for those with limited capital, supplementation of 300 g DM/d sole WB (T5) could be recommended as economically profitable.

Key words: body weight, dangila lambs, digestibility, feed intake, noug seed cake.

I. INTRODUCTION

Ethiopia is endowed with large livestock population; however the productivity per animal is low due to various reasons. Poor nutrition and feed shortages are root causes for the poor performance of livestock sector in Ethiopia, these results in slow growth rate in growing animals and low production and reproduction performance (Diriba et al., 2004; Adugna, 2007).
In the highlands of Ethiopia, natural pasture forms the major source of livestock feed and crop residues and industrial by-products are considered as dry season supplements. Even during years of good rainy season, range forage is not sufficient to feed livestock in the highlands for reasons associated with restricted grazing land and poor management. Crop residues, weeds, foliage and fodder fill the gap between feed supply and demand for livestock production (Tsigeyohannes, 1999).

Almost all crop residues are harvested after the plants reach physiological maturity. As a result, they are high in cell wall and lignin and low in protein and digestible DM. Their energy content ranges from 5.5 to 9.6 MJ ME/kg DM and the CP from 3 to 6.5% in DM (Kossilia, 1984). However, as production costs increase, livestock producers become more interested in the use of crop residues. It can usefully be incorporated into the diets of sheep and other ruminants by adding supplements of energy, protein (generally as NPN) and minerals to give an adequate nutrient supply to the rumen micro-organisms and the animal itself (Ensminger et al., 1990). Therefore, it is highly essential to see alternative and relatively cheaper sources of supplements such as agricultural and industrial by-products, and effective roughage treatment techniques. Among the various agro-industrial by-products, wheat bran and noug seedcake are believed to be important supplements of energy and protein, respectively for sheep (Seyoum, 1995). Techniques such as urea treatment, chopping and mixing with high quality forages can improve the intake and dietary quality of crop residues significantly (Alemayehu, 2005).

In the study area, cereal crop residues including finger millet straw and agro-industrial by-products especially wheat bran and noug seedcake are easily accessible as livestock feed. However, most of the crop residues, particularly finger millet (*Eleucine coracana*) straw is used indiscriminately by livestock with parts of it trampled by the animals. This indicates that it has not been fully exploited as feed for ruminant production particularly for sheep production due to little or no knowledge of storing, processing, treating or improving its feeding value through incorporation of concentrate supplements. Therefore, this study was carried out to evaluate finger millet (*Eleucine coracana*) straw utilization by local sheep using the strategies of Urea treatment and supplementation with agro-industrial by-products with the objectives to:

- evaluate the effect of supplementation with noug seedcake, wheat bran and their mixtures on feed intake, digestibility and live weight change of growing lambs, and
- assess economic benefits of supplementation.

### 2. MATERIALS AND METHODS

**Description of the Study Area:** The study was conducted at Burie ATVET College found in West Gojjam Zone of Amhara Regional State. The study area is located 398 km from Addis Ababa and 150 km South-West of the regional town Bahar Dar. As per the information obtained, the woreda is located at an altitude range of 700-2350 m.a.s.l and has annual rainfall range of 1000-1500 mm and the mean minimum and maximum annual temperatures are 17°C and 21°C, respectively.

**Experimental Feeds Preparation and Feeding:** Finger millet straw was chopped to a size of approximately 2 to 5 cm and stored properly. Urea and concentrate supplements, noug seedcake and wheat bran, were purchased. Two pits were prepared to use alternatively for ensiling purpose. As recommended by Sundstøl *et al.* (1978), urea solution was prepared in proportions by dissolving 40 g urea in one litre of water and used for treating 1 kg of air dried straw. A polyethylene plastic sheet was used to line the floor and sides of the pit. The uniformly treated
and mixed straw was placed sequentially in the pit and trampled/compacted batch by batch. Finally, the pit was sealed with plastic sheet and loaded by soil and sand on top to make it airtight for about three weeks. After the ensiling process was completed, the treated stock was aerated for at least 24 hours before it was provided to the animals to eliminate volatile ammonia that causes toxicity.

Experimental Animals and their Management: Twenty-five male growing Dangila lambs were purchased and quarantined for two weeks in the study site. During this period, they were treated against internal and external parasites and vaccinated against common sheep diseases. Thereafter, the lambs were weighed and blocked into 5 blocks of five animals per block and kept in individual pens. They were offered urea treated millet straw and concentrate supplements as per the treatments (Table 1) to gradually adapt them to the experimental feeds during the 15 days of adaptation period before digestibility trial was started. The mean initial weight of animals for digestibility trial was 17.8 +1.7 (mean + SD). After the completion of digestibility trial, the growth trial was followed with the mean initial weight of animals 18.5 +1.6 (mean + SD).

Experimental Design and Treatments: The experimental lambs were grouped into five blocks of five animals based on initial body weight using randomised complete block design (RCBD). The five-treatment diets were randomly assigned to each animal in the block. Dietary treatments (Table 1) were urea treated finger millet straw (UTFMS) alone, and UTFMS supplemented with noug seedcake, wheat bran and their mixtures. Experimental diets were individually offered to the animals during the experimental period of both digestibility and growth trial. Common salt and water were available to the animals as free choice throughout the experimental periods. The basal diet was offered *ad libitum*, while supplements were offered twice a day in two equal portions at 8:00Am and 4:00Pm hrs.

Table 1: Experimental treatments

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Feeds</th>
<th>NSC (%)</th>
<th>WB (%)</th>
<th>Amount of Daily offer DM (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1</td>
<td><em>Ad libitum</em></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treatment 2</td>
<td><em>Ad libitum</em></td>
<td>100</td>
<td>0</td>
<td>300</td>
</tr>
<tr>
<td>Treatment 3</td>
<td><em>Ad libitum</em></td>
<td>70</td>
<td>30</td>
<td>300</td>
</tr>
<tr>
<td>Treatment 4</td>
<td><em>Ad libitum</em></td>
<td>30</td>
<td>70</td>
<td>300</td>
</tr>
<tr>
<td>Treatment 5</td>
<td><em>Ad libitum</em></td>
<td>0</td>
<td>100</td>
<td>300</td>
</tr>
</tbody>
</table>

DM= Dry matter; NSC = Noug seedcake; UTFMS = Urea treated finger millet straw; WB = Wheat bran

Measurements and Observations

Feed Intake: The amount of feed offered and refused, corresponding to each treatment diet from each lamb, was recorded daily. Daily feed intake of the experimental animals was calculated on DM bases as the difference between the feeds offered and refused.

Digestibility: Digestibility trial was conducted before the beginning of the feeding trial using similar dietary treatments. The lambs were fitted with faecal collection bags (harness) for three days of adaptation period followed by a 7-day faeces collection period; during which time daily feed intake of each animal was recorded. Total faeces voided in the harness were weighed and
recorded daily, then representative samples (20%) were taken daily and bulked over the experimental period and kept in dip freezer adjusted at -10°C pending chemical analysis.

The apparent digestibility of DM, OM, CP, NDF, and ADF was determined using the following formula (McDonald et al., 2002).

\[
\text{Apparent DMD\%} = \frac{\text{DMI} - \text{Faecal DM excreted}}{\text{DMI}} \times 100 \text{ and}
\]

\[
\text{Apparent nutrient digestibility (\%) = } \frac{\text{Nutrient intake - Nutrient in faeces}}{\text{Nutrient intake}} \times 100
\]

**Body weight change and feed conversion efficiency:** The body weight of each lamb was measured during the growth trial at 10 days interval in the mornings before giving the daily feed offer. Average daily body weight change was calculated as the difference between the initial and final live weights of the lambs divided by the number of experimental days. Feed conversion efficiency (FCE) of the animal was determined as the proportion of daily weight gain (g) to the total DM intake (g).

**Partial budget analysis:** Partial budget analysis was undertaken to determine the profitability of supplementation of concentrates to lambs. It only involved the calculation of the major costs of lambs, feeds (variable cost) and benefits gained from the sell prices of lambs without considering other costs like labour, housing, and veterinary services which were common for all treatments.

The purchase prices of experimental feeds were recorded. The average estimates of 151.00 and 271.65 Ethiopian Birr were taken as purchase and sell prices of the animals, respectively. In the analysis, the estimated price difference of sheep (purchase and selling prices) in each treatment was considered as total return (TR).

- The net income (NI) was calculated by subtracting total variable cost (TVC) from the total return (TR): \( NI = TR - TVC \)
- The change in net income (\( \Delta NI \)) was calculated as the difference between the change in total return (\( \Delta TR \)) and the change in total variable cost (\( \Delta TVC \)): \( \Delta NI = \Delta TR - \Delta TVC \)
- The marginal rate of return (MRR) measures the increase in net income (\( \Delta NI \)) associated with each additional unit of expenditure (\( \Delta TVC \)): \( MRR = (\Delta NI) / (\Delta TVC) \)

**Chemical Analysis:** Samples of feeds offered, refused and faeces were dried in draft oven to a constant weight at 60°C for partial DM determination and milled using laboratory mill to pass through 1 mm screen. Finally, dry matter (DM), ash and crude protein (CP) were determined according to the procedure of AOAC (1990). Neutral detergent fibre (NDF), acid detergent fibre (ADF) and acid detergent lignin (ADL) were analysed according to the procedure of Van Soest and Robertson (1985).

**Statistical Analysis:** The data obtained on feed intake, body weight change, feed conversion efficiency and digestibility were subjected to analysis of variance (ANOVA) using the general linear model procedure of SAS (1999) V8. Differences among treatment means were tasted using Duncan’s multiple range test.
The model for the experiment was \( Y_{ij} = \mu + \alpha_i + b_j + \epsilon_{ij} \), where \( Y_{ij} \) = Response variable, \( \mu \) = Overall mean, \( \alpha_i \) = ith treatment effect, \( b_j \) = ith Block effect, and \( \epsilon_{ij} \) = Random error

3. RESULTS AND DISCUSSION

Chemical Composition of Experimental Feeds: The percentage chemical composition of experimental feeds (Table 2) varied depending on feed type, in which the contents of CP in concentrate feeds were higher than the basal diet, but the fiber fractions (NDF, ADF, and ADL) in concentrate feeds were clearly lower than in the basal feed. The relatively higher content of CP in the concentrate feeds revealed their higher nutritional value to supplement animals on poor quality roughages.

Table 2: Chemical composition of experimental feeds

<table>
<thead>
<tr>
<th>Feed samples</th>
<th>Chemical Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DM%</td>
</tr>
<tr>
<td>UFMS</td>
<td>93</td>
</tr>
<tr>
<td>UTFMS (T1)</td>
<td>93.7</td>
</tr>
<tr>
<td>NSC (100%) (T2)</td>
<td>92.4</td>
</tr>
<tr>
<td>70% NSC + 30% WB (T3)</td>
<td>91.5</td>
</tr>
<tr>
<td>30% NSC + 70% WB (T4)</td>
<td>92.7</td>
</tr>
<tr>
<td>WB (100%) (T5)</td>
<td>92.7</td>
</tr>
</tbody>
</table>

ADF = Acid detergent fiber; ADL = Acid detergent lignin; CP = Crude protein; DM = Dry matter; NDF = Neutral detergent fiber; NSC = Noug seedcake; OM = Organic matter; T = Treatment; UFMS = Untreated finger millet straw; UTFMS = Urea treated finger millet straw; WB = Whet bran.

The CP, OM and NDF values of finger millet straw (4.3%, 88% and 68.8%) used in the current trial to prepare urea treated basal diet were higher than the CP value of finger millet straw (3.44%) reported by Mulat (2006) and lower than 5.1% reported by Materr and Reed (1995), which might be associated with differences in the millet varieties.

On the other hand, the laboratory analysis of basal feed sample showed that the application of urea treatment in the current study resulted in nearly doubling in the percentage units of CP value from 4.3% (untreated) to 7.4% (when treated) of the millet straw and tended to decrease the fibre contents. The increased CP value of millet straw due to the urea treatment was highly comparable with the increased CP value from 4.5% (untreated) to 7.8% (urea treated) for rice straw reported by Abebe (2008).

The CP values of concentrate ingredients, namely NSC and WB used in the present study were 32 and 17.7% and that of their mixtures of 70% NSC + 30% WB and 30% NSC + 70% WB were 21.1 and 18.7%, respectively. The CP content of NSC was comparable with the values 31.26% and 30.8% reported by Abebaw (2007) and Abebe (2008), respectively, but it was slightly higher than 28.99% CP reported by Fentie (2007), and lower than 35.5% reported by Mulat (2006). The difference in the CP content of NSC used in the current study from the previous studies might be due to the method of processing (type of extractors in the extraction industries) and variety of the noug seed used (Solomon, 1992).
The CP content of WB observed in the current study was relatively comparable to 17.1, and 20.1% reported by Abebe (2008 and Simret (2005), respectively. But conversely, it was higher than the result 14.9% reported by Mulat (2006) and relatively lower than the CP value 23.08% obtained by Fentie (2007). The differences between the results of the CP content of WB used in the different studies might be due to the variation in raw material (crop variety) and methods of milling. Even sample of the same variety of wheat from the same region may vary up to 10% and sometimes more in content of protein due to processing and/or milling methods (Morrison, 1984).

The DM and OM contents of NSC and WB were relatively in agreement with the results reported by most of the above authors. Generally, the chemical compositions (DM, OM, CP, NDF, ADF, ADL and ash) of the experimental feeds used in the current study were within the ranges of chemical compositions of Ethiopian feeds reported by Seyoum et al. (2007).

Dry Matter and Nutrient Intake: Significant differences (P<0.001) were observed among treatments in the mean daily DM and nutrient intakes (Table 3). Feeding of sole urea treated finger millet straw to lambs in the current trial improved straw DM consumption (589.49 g/d) than 367.6 g/d for untreated millet straw (Mulat, 2006), and maintained positive growth rate as opposed to sheep fed sole untreated straw. This result was in agreement with the response of sheep fed urea treated wheat straw that improved DM intake from 323 to 566.7 g/d (Getahun, 2006).

Table 3: Daily dry matter and nutrient intakes of Dangila lambs

<table>
<thead>
<tr>
<th>Parameters</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>SEM</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dry matter intake</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straw (g/d)</td>
<td>589.5s</td>
<td>450.5d</td>
<td>443.1d</td>
<td>543.1b</td>
<td>521.6c</td>
<td>6.32</td>
<td>***</td>
</tr>
<tr>
<td>supplement (g/d)</td>
<td>-</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>-</td>
<td>NS</td>
</tr>
<tr>
<td>Total (g/d)</td>
<td>589.5d</td>
<td>750.5c</td>
<td>743.1c</td>
<td>843.1a</td>
<td>821.6b</td>
<td>6.32</td>
<td>***</td>
</tr>
<tr>
<td>DMI (% BW)</td>
<td>3.3e</td>
<td>3.6c</td>
<td>3.5d</td>
<td>3.89b</td>
<td>3.97a</td>
<td>0.02</td>
<td>***</td>
</tr>
<tr>
<td>DMI (g/kg W0.75)</td>
<td>67.5d</td>
<td>76.9b</td>
<td>75.1c</td>
<td>83.9a</td>
<td>84.6a</td>
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<tr>
<td><strong>Nutrient intake</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME (MJ/d)</td>
<td>5.04d</td>
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<td>6.6c</td>
<td>7.6b</td>
<td>7.8a</td>
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<td>OM (g/d)</td>
<td>476.8d</td>
<td>619.9e</td>
<td>611.1e</td>
<td>688.4a</td>
<td>670.1b</td>
<td>5.18</td>
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<td>CPI (g/d)</td>
<td>49.4d</td>
<td>134.3a</td>
<td>101.3b</td>
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<td>99.2c</td>
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<tr>
<td>NDFI (g/d)</td>
<td>402.7c</td>
<td>422.3b</td>
<td>407.7c</td>
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</tr>
<tr>
<td>ADFI (g/d)</td>
<td>239.3c</td>
<td>275.2a</td>
<td>244.9c</td>
<td>264.0b</td>
<td>240.3c</td>
<td>2.54</td>
<td>***</td>
</tr>
<tr>
<td>SR</td>
<td>-</td>
<td>0.46a</td>
<td>0.49a</td>
<td>0.15b</td>
<td>0.23b</td>
<td>0.03</td>
<td>***</td>
</tr>
</tbody>
</table>

Means within rows with different superscripts (a-d) are significantly different. * = P<0.05; ***=P<0.001; NS=Not significant; SEM = Standard error of mean; SL = Significance level; DMI = dry matter intake; OM = Organic matter intake; CPI = Crude protein intake; NDFI = Neutral detergent fiber intake; ADFI = Acid detergent fiber intake; SR = Substitution rate; T1 = Urea treated finger millet straw; T2 = T1 + 300g NSC (noug seedcake); T3 = T1 + 300g (70% NSC + 30% WB); T4 = T1 + 300g (30% NSC + 70% WB); T5 = T1 + 300g WB (wheat bran).

The urea treated straw DM intake in the control group (T1) was higher (P<0.001) than the supplemented groups. This might be associated with the fact that sheep offered with low CP and high NDF content of UTFMS were attempting to meet their nutrient requirements through the intake of relatively more basal diet. Conversely, sheep supplemented with concentrates had higher (P<0.001) total DM intake as compared to control ones (T1) due to the effects of supplementation allowing them to have options for selection and limit intake of the basal diet. In
line with the result of the current study. Butterworth and Mosi (1985) reported higher total DM intake in sheep supplemented with noug seed cake, but decreased intake of the basal diet because of the substitution effects of the concentrate supplements.

Among the supplemented treatments, T4 had higher DM intake followed by T5, with high proportion of WB supplement. This may indicate that in urea treated crop residues supplementation with feed containing higher energy source is beneficial than those with high protein content.

In this study, substitution rate of UTFMS with the concentrate supplement was observed at the rate of 0.46, 0.49, 0.15 and 0.23 for T2, T3, T4 and T5, respectively. Type and amount of supplement can affect substitution rate, and it has been generally found that substitution rate increases with the level of supplementation indicating an increased density of nutrient intake above the level that basal diet alone can support (Ponnampalam et al., 2004). Similarly, Preston and Leng (1984) suggested that supplements can substitute fibrous feeds if the levels of supplementation exceed 20% of the diet dry matter.

The total daily DM intake of supplemented sheep (743-843 g/d) in the present study was comparable to that reported by Getahun (2006), who found 680-751 g/d in Arsi-Bale sheep fed urea treated wheat straw and supplemented with Leucaena leucocephala. But, relatively higher than 480-498 g/d DM intake reported by Mulat (2006) for local sheep fed finger millet straw basal diet supplemented with different protein sources. The significant difference observed may be due to variations in body weight gain and efficiency of feed utilization of the experimental sheep.

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Figure 1: Trends in daily dry matter intake of Dangila lambs

The total DM intake as percent of body weight (3.3-3.97%) in the current study was significantly (P<0.001) different among treatments in a similar manner as DM intake per unit metabolic body weight (Table 3). This result was within the range of total DM intake as percent of body weight (2-6%) recommended by the ARC (1980). Generally, the total daily DM intake in the current study increased with duration of feeding period (Figure 1).
The estimated ME (Table 3) indicated that the energy intake in all treatments was above the maintenance ME requirement range of 3.7-4.1 MJ/d estimated for a 20 kg lamb (ARC, 1980). The calculated value was higher (P<0.001) in supplemented group (5.6-6.2 MJ/d) as compared to control group (3.8 MJ/d), but among supplemented groups T5 had greater (P<0.05) energy intake (6.2 MJ/d). This might be associated with the relatively higher digestibility and energy content of supplement in T5.

In the present study, significantly higher (P<0.001) OM and CP intakes were observed in T2, T3, T4, and T5, as compared to the control treatment. These CP and OM intake increments in supplemented lambs could be attributed to increased total DM intake and higher CP and OM contents of NSC, WB and their mixtures. The control diet provided also relatively adequate CP intake to meet the maintenance requirements, this holds true since UTFMS basal diet contained relatively higher amount of CP (7.4%).

The values of the CP intake in the current experiment were comparable to the CP intake values that ranged from 31.4 to 78.7 g/d reported by Getahun (2006). According to Ranjhan (1997), the average daily protein and energy requirement for maintenance of the sheep weighing 30 kg was reported to be 36 g CP and 4.017 MJ ME, respectively. This indicated that the supplemented sheep in this study had CP intake more than their maintenance requirement and the achieved body weight gain was expected.

Significant differences (P<0.001) were observed among treatments in NDF and ADF intakes. The higher intake of NDF of the supplemented groups especially in T4 and T5 might be associated with the relatively higher NDF contents of the concentrate mixtures of 30% NSC + 70% WB and the sole WB supplements.

Dry Matter and Nutrient Digestibility: The present study revealed that, significant treatment differences (P<0.001) were observed in apparent DM and nutrients digestibility (Table 4). Numerically lower DM and OM digestibility was recorded for the control group as compared to T4 and T5, but there was no significant difference (P>0.05) between the control (T1), T2 and T3. This might be due to the lower CP and higher fiber fraction contents of the UTFMS basal diet compared to the supplement feeds (Table 2). Similarly, the higher (P<0.001) digestibility of CP in supplemented animals compared to the control group in the present study could be associated with the higher supply of dietary CP in the former group.

Table 4: Apparent digestibility (%) of DM and nutrients in Dangila lambs

<table>
<thead>
<tr>
<th>Parameters</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>SEM</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMD</td>
<td>62.5^c</td>
<td>64.2^c</td>
<td>64.9^c</td>
<td>68.8^b</td>
<td>72.3^a</td>
<td>0.96</td>
<td>***</td>
</tr>
<tr>
<td>OMD</td>
<td>67.3^c</td>
<td>68.2^c</td>
<td>69.0^bc</td>
<td>71.3^b</td>
<td>74.1^a</td>
<td>0.90</td>
<td>***</td>
</tr>
<tr>
<td>CPD</td>
<td>31.4^c</td>
<td>70.6^b</td>
<td>68.6^b</td>
<td>70.7^b</td>
<td>75.9^a</td>
<td>1.44</td>
<td>***</td>
</tr>
<tr>
<td>NDFD</td>
<td>64.6^c</td>
<td>73.3^a</td>
<td>65.9^c</td>
<td>69.3^b</td>
<td>71.7^a</td>
<td>0.88</td>
<td>***</td>
</tr>
<tr>
<td>ADFD</td>
<td>59.4^c</td>
<td>69.4^a</td>
<td>63.4^b</td>
<td>62.8^b</td>
<td>68.0^a</td>
<td>1.03</td>
<td>***</td>
</tr>
</tbody>
</table>

*Means within rows with different superscripts (a-c) are significantly different. *P<0.05; ***P<0.001; SEM = standard error of mean; SL = significance level; DMD = dry matter digestibility; OMD = organic matter digestibility; CPD = crude protein digestibility; NDFD = neutral detergent fiber digestibility; ADFD = Acid detergent digestibility; T1-T5 = Treatments.*
In line with the current result, Ferrell et al. (1999) documented a significant improvement of DM, OM and CP digestibility in protein and energy supplemented feed as compared to sole roughage diet, which was attributed to the high digestibility of the supplements. Digestibility is much reduced when a ration contains too little protein in proportion to the amount of readily digestible carbohydrate (McDonald et al., 2002).

In the present study, urea treatment of finger millet straw improved the digestibility of DM, OM, NDF and ADF when compared with the values of 43.4, 46.6, 49.4, and 50.8%, respectively reported by Mulat (2006) in local lambs fed sole untreated finger millet straw basal diet. The increase in digestibility of treated straw than untreated could be explained by the fact that the lignocellulose bonds in the cell walls might have been broken down by the alkali which made more cellulose and hemicellulose available for digestion by rumen microbes (Orskov, 1978).

On the other hand, CP digestibility (31.4%) of the sole urea treated finger millet straw in the current study was comparable with the CP digestibility values of 35.4% and 32.6% in urea treated rice straw and sole Teff straw reported by Abebe (2008) and Tesfay (2007), respectively. However, the lower apparent digestibility of CP in sole urea treated straw, below the expected, was possibly due to low protein, and higher cell wall fractions content of the treated straw when compared to the supplemented diets, which affect microbial growth and fermentation in the rumen (McDonald et al., 2002). In accordance with the current result, Ferrell et al. (1999) also reported that the high fiber and low CP concentration of low quality forages are expected to result in low apparent digestibility of CP. The observed apparent digestibility differences of CP and other nutrients in urea treated straws reported by different authors including the current study might be due to the varietal difference of the straw and the environmental factors affecting effectiveness of urea treatment (Sundstol et al., 1978).

The digestibility of straw NDF and ADF were improved to 64.6 and 59.4%, respectively due to urea treatment when compared with NDF and ADF digestibility values of 49.4 and 51% reported by Mulat (2006) in local lambs fed sole finger millet basal diet. Comparison between sole treated finger millet straw and supplementation of treated straw showed a significant (P<0.001) increase in apparent digestibility of NDF and ADF due to supplementation, even between supplemented groups of sheep significant differences were observed due to the differences in nutrient contents of supplements.

Live Weight Change and Feed Conversion Efficiency: The results of live weight change of experimental animals (Table 5) indicated that, during the 90 days of growth period, Lambs supplemented with concentrate feeds having different CP content had higher (P<0.001) daily live weight gains as compared to lambs on the control diet. However, lambs in the control treatment maintained their live weight with a slight gains (5.56 g/d), which agreed with that reported by Masimbiti (2001), where feeding of animals on treated stover tended to improve their growth rates or weight gains. In agreement with the result, Donovan et al. (1997) reported that the 2-4% CP content of untreated cereal straws was improved to a “potential” CP level of 7-12%, which was sufficient for maintenance of live weight.

The increased daily weight gain for concentrate supplemented groups of lambs in the present study could be attributed to the higher protein and energy intakes from the supplements. Supplementation improved daily live weight gain, perhaps through providing nutrient available for absorption and/or by enhancing microbial protein synthesis. There was also significant
(P<0.05) difference between the supplemented groups. Accordingly, the average daily live weight gain recorded by T4 (71.33 g) was higher than that in T2 and T3, but similar with that recorded in T5. This could be attributed to the increased intake of energy and an accompanying improvement in the utilisation of non-protein nitrogen in the urea treated finger millet straw.

Table 5: Live weight change, average live weight gain and feed conversion efficiency in Dangila lambs

<table>
<thead>
<tr>
<th>Parameters</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>SEM</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBW (kg)</td>
<td>18.5</td>
<td>18.4</td>
<td>18.8</td>
<td>18.8</td>
<td>18.3</td>
<td>0.45</td>
<td>NS</td>
</tr>
<tr>
<td>FBW (kg)</td>
<td>19^b</td>
<td>23^a</td>
<td>23.3^a</td>
<td>25.2^a</td>
<td>24.1^a</td>
<td>0.83</td>
<td>***</td>
</tr>
<tr>
<td>ADG (g/d)</td>
<td>5.6^c</td>
<td>51.1^b</td>
<td>50.2^b</td>
<td>71.3^a</td>
<td>64.7^ab</td>
<td>5.98</td>
<td>***</td>
</tr>
<tr>
<td>FCE</td>
<td>0.01^b</td>
<td>0.07^a</td>
<td>0.07^a</td>
<td>0.08^a</td>
<td>0.08^a</td>
<td>0.001</td>
<td>***</td>
</tr>
</tbody>
</table>

Means within rows with different superscripts (a-c) are significantly different. * =P<0.05; ***=P<0.001; NS=Not significant; SEM = Standard error of mean; SL = Significance level; IBW = Initial body weight; FBW = Final body weight; ADG = Average daily gain; FCE = Feed conversion efficiency; T1-T5 = Treatments.

Early work by Munthali et al. (1992) showed that soluble carbohydrate enhance microbial growth in the rumen and induced better utilization of non-protein nitrogen, than any other nutrients, which finally resulted in improvement in body weight gain of growing steers and heifers fed on urea treated maize stover based diet; the 70% WB: 30%NSC (T4) and sole WB (T5) supplements used in the current study are rich in energy than the supplements in T2 and T3. The significant (P<0.05) difference observed between supplemented groups in daily weight gain reflected the fact that the supplement rations were not comparable in their potentials to supply nutrients for growth of lambs. Ensminnger (2002) showed that low energy intake that results from either feed restriction or low ration component digestibility prevents sheep from meeting their requirements and from attaining their genetic potential. Besides, Kellems and Church (2002) also documented that supplementation of nitrogen sources will aid to optimize rumen ammonia concentration, but to enhance microbial growth and utilize rumen ammonia efficiently, there is a need to supplement with readily soluble carbohydrate simultaneously so that supplementation strategy synchronizes the rate of ammonia and rate of energy release.

The trend of weight changes across feeding weeks (Figure 2) revealed that feeding for three months trial time continued to increase the live weight gain of the supplemented groups progressively. The linearly increased body weight change graph also indicated the fact that sole urea treated finger millet straw supported the maintenance and minimal body weight gain of lambs.

Feed conversion efficiency (FCE), based on the proportion of daily weight gain (g) to the total DM intake (g), obtained in the present study was significantly improved (P<0.001) in supplemented lambs than control ones. The observed higher FCE in the supplemented group of lambs than those offered sole urea treated basal diet might be due to the higher CP and energy contents of supplements in providing absorbed nutrients and/or by enhancing the treated straw nutrients utilization.

Despite the higher gains and higher feed DM intake of supplemented lambs, there was no significant (P>0.05) difference in FCE among supplemented diets indicating the fact that nearly similar quantities of feed nutrients might have been utilized for a unit of live weight gain. However, among the supplemented treatments 30% NSC + 70% WB and 100% WB
supplemented groups resulted in numerically better feed conversion efficiency in growing lambs when compared to other treatment groups.

![Graph showing body weight change across feeding periods]

**Figure 2: Trends of body weight change across the feeding period**

**Partial Budget Analysis:** Partial budget analysis was used to calculate the potential profitability of new technology to choose between alternatives, i.e., the profitability of supplementation to lambs. It involved the calculation of the major costs of lambs (purchasing and selling prices) and feed costs (variable cost) including costs incurred related to feed transportation and preparation, without considering other costs like labour, housing, and veterinary service which were common for all treatments.

Partial budget measures profit or loss which is the net benefits or difference between gains and losses for the proposed change. Gain refers to added return and reduced costs, whereas lose refers added costs and reduced returns. Even though there was no/or very little body weight gain/lamb, a positive total return (43.00) or net return (11.05) was obtained in the control groups. This was mainly due to the high price or high market demand of live lambs during the time of selling. In the supplemented groups, the relatively higher total returns were based not only on their higher body weights of the animals, but also the actual market situation was changed during selling time at the end of the experiment, resulting in higher market price per animal.

The net return of T4 was higher than T5, T3 and T2. The difference in the net return among treatments was mainly due to the difference in selling price of the animals in each treatment, and the purchasing price differences in concentrate supplements.
Table 6: Partial budget analysis for Dangila lambs fed urea treated finger millet straw and supplemented with noug seedcake, wheat bran and their mixtures in different proportions

<table>
<thead>
<tr>
<th>Parameters</th>
<th>T1</th>
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<th>T3</th>
<th>T4</th>
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<td>151.00</td>
<td>151.00</td>
<td>151.00</td>
<td>151.00</td>
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<td>Total UTFMS consumed (kg/head)</td>
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<td>43.60</td>
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<td>Total concentrate consumed (kg)</td>
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<td>29.25</td>
<td>29.25</td>
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<tr>
<td>Cost for UTFMS (ETB/head)</td>
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<td>24.42</td>
<td>24.01</td>
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<tr>
<td>Cost for concentrate (ETB/head)</td>
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<td>Total feed cost (ETB/head)</td>
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<td>Gross income (ETB/head)</td>
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<td>290.75</td>
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<td>Total return (TR) (ETB/head)</td>
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<td>132.00</td>
<td>134.50</td>
<td>154.00</td>
<td>139.75</td>
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<tr>
<td>Net return (NI) (ETB/head)</td>
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<td>60.47</td>
<td>82.16</td>
<td>74.92</td>
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<tr>
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<td>∆TVC</td>
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<td>42.08</td>
<td>39.89</td>
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<td>MRR (Ratio)</td>
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<td>1.1744</td>
<td>1.783</td>
<td>1.943</td>
</tr>
<tr>
<td>MRR (%)</td>
<td>-</td>
<td>85.22</td>
<td>117.44</td>
<td>178.27</td>
<td>194.25</td>
</tr>
</tbody>
</table>

ΔNI = Change in net income; ∆TVC = Change in total variable cost; MRR = Marginal rate of revenue; ∆ TR = Change in total return; ETB = Ethiopian birr; UTFMS = Urea treated finger millet straw, T1-T5 = Treatments.

The MRR implied that each additional unit of 1 Birr per lamb cost increment resulted in 1 Birr and additional 0.852, 1.174, 1.783, and 1.943 ETB profit for T2, T3, T4 and T5, respectively. Despite the lower net return obtained, the MRR in T5 was higher than the MRR of T4, which was mainly due to the lower cost of WB (1.25 ETB/kg) in T5 than the cost of concentrate mix (1.45 ETB/kg) in T4. The higher cost of NSC (1.90 ETB/kg) had an effect on mixture concentrate supplements of T3 and T4 which in turn affected their MRR value that determined extra (marginal) net benefit.

Assuming that capital is not a constraint, the technology with the highest ∆NR is chosen. However, new technologies normally require investment, therefore additional capital is necessary. When capital is limited, the extra (marginal) cost should be compared with the extra (marginal) net benefit. Even though lambs in T4 showed good performance in live weight gain and feed conversion efficiency, it was not found to be economically feasible as compared to lambs in T5. On the other hand, T5 was found to be profitable and economically feasible due to the relatively lower cost of supplement feed regardless of lambs live weight gain and feed conversion efficiency. Thus, the result of this study suggested that supplementation of urea treated finger millet straw with 300 g DM wheat bran was potentially profitable and economically feasible than supplementing 300 g DM NSC and same amount of mixtures of NSC and WB in different proportions. Next to wheat bran supplementation, 300 g DM of NSC and WB mixtures (in the proportion of 30% NSC and 70% /WB), was found to be economical to supplement urea treated finger millet straw for growing Dangila lambs with better body weight gain and feed conversion efficiency. However, if prices of feeds and animals should be changed, recommendation could be changed based on the actual situation.
4. CONCLUSIONS AND RECOMMENDATIONS

In this study, the digestion trial of 7 days was followed by 90 days feeding trial using twenty five male growing Dangila lambs and five dietary treatments. Treatment diets were randomly assigned to each lamb within a block. The supplement was offered at the rate of 300 g/d. Feed intake, feed refusal and faeces voided were recorded daily and the required samples were collected. Body weight changes of lambs during the feeding trial were recorded every 10 days interval. Samples of feed (offer and refused), concentrate ingredients and faeces were analyzed for nutrients. Data were analyzed using the GLM procedure of SAS (1999) V8.

The chemical analysis of feed samples showed that urea treatment of finger millet straw improved straw crude protein (CP) from 4.3 to 7.4%; reduced the NDF content of the straw from 68.8 to 65.6% by solubilizing cell wall constituents and exposing for microbial digestion. On the other hand, the observed CP and other nutrient contents of concentrates are indicatives of the fact that these concentrate supplements are good sources of nutrient for supplementing poor quality fibrous diet. The results of the feeding trial showed that lambs on the controlled diet consumed significantly higher (P<0.001) quantity of basal DM (589.49 g/d) than supplemented groups of lambs (443-543 g/d). However, supplementation of NSC, WB and their mixtures significantly improved (P<0.001) the total DMI (743-843 g/d) and total CPI (99-134.34 g/d).

Feeding with sole urea treated millet straw (T1) fulfilled the nutrient requirements of animals with a slight mean daily live weight gain of 5.56 g/d. However, supplementation (T2-T5) promoted higher (P<0.001) daily weight gain (50.2-71.3 g/d) with higher (P<0.001) feed conversion efficiency (FCE). Moreover, Supplementation significantly improved (P<0.001) the apparent digestibility of DM, OM, CP NDF, and ADF.

Generally, supplementation of NSC, WB, and their mixtures in different proportions to the urea treated basal diet improved total DM and nutrients intake and digestibility, and it also improved the growth performance and feed conversion efficiency of Danigla lambs over the control group. But, T4 and T5, which had better daily weight gain and feed utilization, could be the primary choices than other supplemented groups. Therefore, it is recommended that supplementation of sole WB (T5) and mixtures of (70% WB + 30% NSC) (T4) could be as optimal levels than other treatments for better utilization of nutrients and animal performance in Dangila lambs fed on urea treated millet straw basal diet. However, based on partial budget analysis, supplementation of 300 g DM/d of sole WB (100%) (T5) is recommended as it is economically profitable for those producers with limited capital.

REFERENCES


Evaluation of Land for Irrigation: The Case of Fogera Woreda, South Gondar Zone
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Abstract

Irrigation land suitability assessment and mapping play an imperative role for sustainable utilization of scarce physical land resources. The objectives of this study were to prepare spatial data base of physical land resources for irrigated agriculture and to assess land suitability for irrigation and developing suitable area map for the study area. The study was conducted at Fogera woreda, South Gondar. Soil and water sampling spots were selected based on free and grid survey techniques and their locations were taken using Global Positioning System (GPS). Geographical Information System (GIS) techniques were used to develop irrigation land suitability map of the study area. Attributes of parameters were collected and used for suitability assessment. Attributes used as criteria for irrigation suitability analysis were ECₑ, ESP, soil depth, texture, pH, top and sub soil stoniness, water table depth, flood hazard, ground water quality (SAR and EC) and slope. Point data with their attribute were arranged and proximity analysis of Arc-GIS was made this resulted into twelve mapping units. The final irrigation suitability map of the project area was derived after overlay analysis. On the basis of stoniness, soil salinity, soil alkalinity, soil depth and groundwater quality it was concluded that 72 percent of the study area is potentially suitable for irrigation and 28 percent was classified as unsuitable (N) due to drainage limitation, flood hazard, texture and slope factors. Of the potentially suitable land, 1 percent was highly suitable (S₁), 28 percent was moderately suitable (S₂), and 43 percent is marginally suitable (S₃).

Key words: parameters, land suitability, soil mapping unit

1. INTRODUCTION

Agriculture is the basis for the economy of Ethiopia. It accounts for the employment of 90 percent of its population, over 50 percent of the country’s gross domestic product (GDP) and over 90 percent of foreign exchange earnings (ECACC, 2002). Irrespective of this fact, production system is dominated by small-scale subsistence farming system largely based on low-input and low-output rain fed agriculture. As the result farm output lags behind the food requirement of the fast growing population. The high dependency on rain fed farming in the dry lands of Ethiopia and the erratic rainfall require alternative ways of improving agricultural production.

Considering the available water and land resources of the country, Ethiopia has immense potential in expanding irrigated agriculture. Despite its irrigation potential which is estimated to be about 3.7 million hectare, only about 190,000 hectare (5.3 percent of the potential) is currently under irrigation, which plays insignificant role in the country’s agricultural production (Negash and Seleshie, 2004). Use of land and water resources for the development of irrigation facilities could lead to substantial increase in food production in many parts of the world. Proper use of land depends on the suitability or capability of land for specific purposes (Fasina, et al, 2008). Thus, to bring food security at national as well as household level, improvement and expansion of irrigated agriculture must be seriously considered.
There is limited land and water resources based investigation of irrigation potential in Ethiopia (Negash and Seleshi, 2004). Small scale studies fell short in adequately providing basic soil information that can help to make appropriate decision on proper utilization of the land resources. The soil data used in such studies are based on the regional and basin wide soil studies, geomorphology and soil map of Ethiopia at 1:1000,000 scale (FAO, 1984a) and soil association map at 1:2000,000 scale (FAO, 1984b). Moreover, other site specific studies including the preliminary survey of soils in the study area failed to show detailed physical and chemical suitability of the land for irrigation. Previous works provide insufficient information to implement micro-watershed management in general and farm level irrigation planning in particular. Thus, the existing small scale irrigation system being carried out in the Fogera catchment have no adequate soil and land resource information. This calls for a need to conduct detailed to semi-detailed soil and land studies at farm levels for use in irrigation suitability analysis. Detailed and accurate data on the soil and land resources is the first requirement in evaluating land for irrigation suitability (Jafarzadeh et al. 2005). Land evaluation is related with the selection of suitable land, and suitable cropping, irrigation and management alternatives that are physically and financially practicable and economically viable (FAO, 1985).

The specific objectives of the study were to evaluate the land for irrigation, prepare spatial database of physical land resources for irrigated agriculture, assess land suitability area for irrigation in Fogera catchment, and to develop irrigation suitability map of the catchment using GIS tools.

2. STUDY AREA

Fogera plain is a vast agricultural land located at 11°50'42" N and 37° 39' 45" E (Figure 1). The plain is adjacent to Lake Tana (source of Blue Nile) with an altitude of about 1800 m.a.s.l. The dominant soil type in the area is clay soil and the soils within the command area have moderately deep to deep effective soil depth. These soils have poor drainage and workability character. Some parts of the command area, specially the lower parts, are (flooded) with the rainwater in the rainy season for about 3-4 months. The temperature of the area ranges between 6.3 °C to 33 °C. The area is characterized by uni-modal rainfall pattern with annual average rainfall of 1259 mm. The land use of the selected study area is 74.76 percent cultivated, 1.74 percent grazing land, 23.06 percent forest and 0.44 percent degraded. Topography includes 76 percent plain, 13 percent gentle slope and 11 percent mountainous (Wolelaw, 2005). The sources of water for irrigation in the catchment include ground water wells on farmer’s field, and a local river (Gwanta River) which has an average base flow of 263 liter/sec. Small scale irrigations are managed by local farmers. Major irrigated crops grown include onion, rice, tomato and maize.

3. DATA AND METHODS

Topographic map (1:50,000) and Aerial Photograph (1:250,000) of the study area are collected from the Ethiopian mapping agency (EMA) for area identification. The project area was selected based on topography and access to irrigation water supply. General information about the study area on climate, soil and vegetation were also collected from available document. Interpretation and identification of features were made using the existing 1:250,000 and 1:50,000 scale aerial photograph and topographical maps respectively. To delineate the watershed, traverse survey was made using GPS. This data was then down loaded to a GIS environment and used to develop the boundary of study area. Digital elevation model (DEM) from the SRTM is used for
topographic analysis. Soil and water sampling locations and elevations were captured as a point. These digital data sets were imported to a GIS environment.

3.1 Soil, Water and Slope Data

Based on a preliminary soil and water survey, soil samples are collected from three profile and nine auger holes. The spots are selected using both grid survey and free survey techniques. Being a medium intensity soil survey, one observation per 50 ha was taken as per the recommendations of FAO (1979). Observation sites were located according to the requirements and complexity of the soil patterns and composite soil samples were used for soil analysis. Profile explorations were made at three suitable sites based on the soil color, drainage property of the specific location, source of irrigation water and relative position in the slope of the study area.

Drainage characteristics, water logging risk, internal drainage of the profile and visible soil saturated condition are determined using auger hole where the water table depth were also measured (Dennis et al., 2005). Depth and duration of flood inundation were measured on areas where water logging occurs during the cropping season. These measurements were used to assess flood hazard.

In characterizing the topsoil and subsoil, three profile and nine auger holes (sampling points) were collected at 20 cm and 80 cm depth and their geographic location recorded using hand held GPS. The samples were analyzed for texture, salinity, ESP, pH and soil stoniness.

The soil samples were first air-dried, grounded and passed through 2 mm sieve to undertake the physical and chemical analysis. The soil samples were analyzed for top soil texture, stoniness, soil salinity, pH and soil alkalinity. Texture analysis of a soil sample was made using
Hydrometric method as described by Gupta (2004). Stoniness was assessed by sieving. In order to assess the salinity hazard of a soil, electrical conductivity (ECe) measurements were carried out. For this, the saturation paste extract was prepared (Gupta, 2004), and ECe was determined by conductivity meter and expressed in millimose per centimeter (mmhos/cm). Soil pH was read simultaneously using pH meter from saturation paste extract. ESP was determined after analyzing sodium concentration and cations exchange capacity of the soil. Sodium concentration was determined using flame photometer; while CEC measurement was made by ammonium acetate method. The exchangeable sodium percentage was calculated, by dividing exchangeable sodium to cation exchange capacity.

Salinity of the groundwater was measured using electrical conductivity meter and the pH of the groundwater sample was measured with pH meter. Sodium adsorption ratio were determined after analyzing sodium with flame photometer, calcium and magnesium were determined using atomic absorption spectrophotometer. Sodium adsorption ratio was calculated by dividing sodium concentration to the squares root of the average of sodium and magnesium concentrations.

Water was sampled from wells, which were used at household irrigation water sources. High spot areas were visited from selected wells located at upper, middle and lower part of the catchment area and thereafter, water was sampled. Total study area was classified based on elevation source which helps as mapping unit for water quality assessment. The sampling took place during dry season. Two samples per month were collected during irrigation period from nine locations. Samples from wells were collected after withdrawal of water for some hours. At the time of collection, a label bearing a short identifying description was attached to the bottle. Name of the farmer, location, irrigated crops, farmers observation on the source of the irrigation water were also recorded. Topographic map (1:50,000) of the study area available from Ethiopian Mapping Agency are too sparse and hence are not suitable. Hence slope of the study area is derived from SRTM-DEM.

**Spatial Data Analysis**

**Suitability Criteria Used:** The framework followed in this land suitability evaluation study is one given by Dent and Young (1981) and FAO (1976). In addition, land evaluation standards for land resource mapping given by Dennis et al (2005) were also used for evaluation with little adjustments according to local conditions. As such field survey data and laboratory results were rated based on land evaluations method for irrigated agriculture. The evaluation is made on the basis of different land characteristics and their appraisal for irrigation purpose such as the soil, topographic, water quality and drainage situation as recommended by FAO.

The suitability classification was grouped at the first level of the land development units in six classes; Class I – III: suitable for irrigated agriculture, Class IV: not irrigable, except under special conditions, Class V: undetermined suitability for irrigation; and Class VI: non-irrigable. The second level of the classification is based on four factors: soil limitations, salinity, and topography and drainage situation.

Separate land suitability classifications were made for the investigated land area with respect to each land use. In essence, suitability ranges were defined separately for each of the qualities and three suitability classes (S1, S2 and S3) were used within the order of suitable and one as class (N) within the order of not suitable.
Proximity Analysis: The aerial extent of measured parameters is determined using the Thiessen polygon interpolation. Hence texture, salinity, ESP, pH and soil stoniness raster maps are generated from the measured data and assigned to each mapping unit resulted from the Thiessen polygon boundaries. Proximity analysis of Arc-GIS spatial analysis generated twelve Mapping units (Figure 2).

![Mapping units developed using proximity analysis](image)

Irrigation Land Suitability Analysis: Based on the suitability criteria assigned, layer of the criteria were developed, an overlay analysis was done to generate one suitability map which have the attribute of all land qualities with their theme attribute table. An overlay analysis in GIS was operated by Boolean operator (Burrough, 1989).

4. RESULTS

Physico-Chemical Properties of Soil: Based on geographic location of sampling point taken at the study area, raster map units are generated as shown the above (Figure 1) and the parameters were distributed through the Thiessen polygons and values were extracted from study area boundary. According to different properties of soils, relative proportion of soil separates; effective soil depth, the pH, saturation extract electrical conductivity values, ESP and stoniness are presented in Table 1.

Depth, Texture and Stoniness: As it was seen from auger-hole observation and profile description of soils, the soil depths at all sampling points were greater than 150 cm. Hence the soil in the study area could be considered as very deep soil. The soil texture sample was dominantly clay. It ranges from clay to heavy clay for top soil and clay to silty loam for sub-soil. The soil color was varied from dark reddish brown to reddish brown and dark reddish gray. The maximum percentage of clay in the surface soil was observed as 62 percent on mapping units 2 and 8, and the minimum percentage of clay was recorded as 26 percent in the sub-soil on mapping unit 5. In all sampling units, proportion of silt to sand ratio was generally high. In all mapping units, the ratios were greater than one and the sand proportions were below 20 percent. This might be attributed to the deposition of clay and silt particles which were flooded from uplands to outside of the study area.
Table 1: Soil physico-chemical analysis

<table>
<thead>
<tr>
<th>Map unit</th>
<th>Soil depth (cm)</th>
<th>Depth (cm)</th>
<th>Sand (%)</th>
<th>Silt (%)</th>
<th>Clay (%)</th>
<th>pH</th>
<th>ECE (ds/m)</th>
<th>ESP (%)</th>
<th>Stoniness (%)</th>
<th>Textural class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt;150</td>
<td>0-20</td>
<td>11</td>
<td>31</td>
<td>58</td>
<td>5.4</td>
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<td>4.0</td>
<td>4</td>
<td>Clay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20-80</td>
<td>14</td>
<td>29</td>
<td>57</td>
<td>5.7</td>
<td>0.128</td>
<td>4.0</td>
<td>10</td>
<td>Clay</td>
</tr>
<tr>
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<td>&gt;150</td>
<td>0-20</td>
<td>14</td>
<td>24</td>
<td>62</td>
<td>5.0</td>
<td>0.06</td>
<td>3.8</td>
<td>4</td>
<td>Heavy clay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20-80</td>
<td>14</td>
<td>29</td>
<td>57</td>
<td>5.1</td>
<td>0.129</td>
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<td>5</td>
<td>Clay</td>
</tr>
<tr>
<td>3</td>
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<td>41</td>
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<td>5.1</td>
<td>0.06</td>
<td>3.82</td>
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<td>30</td>
<td>6.99</td>
<td>0.236</td>
<td>1.95</td>
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<tr>
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<td>23</td>
<td>51</td>
<td>26</td>
<td>6.43</td>
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<td>6.53</td>
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<td>Silty loam</td>
</tr>
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<td></td>
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<td>20-80</td>
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<td>0.07</td>
<td>2.94</td>
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<tr>
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<td>31</td>
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<td>7.29</td>
<td>0.128</td>
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</tr>
<tr>
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<td>0.06</td>
<td>4.34</td>
<td>4</td>
<td>Heavy clay</td>
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<td>45</td>
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<td>2.63</td>
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<td>0.38</td>
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<td>Clay</td>
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<tr>
<td></td>
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<td>60</td>
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<td>0.32</td>
<td>5.8</td>
<td>3</td>
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</tr>
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<td>24</td>
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</tr>
<tr>
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<td>31</td>
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<td>5.4</td>
<td>0.128</td>
<td>4.0</td>
<td>2</td>
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<tr>
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<td>17</td>
<td>30</td>
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<td>6.4</td>
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<td>4.3</td>
<td>3</td>
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</tr>
<tr>
<td>11</td>
<td>&gt;150</td>
<td>0-20</td>
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<td>0.192</td>
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<td></td>
<td></td>
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<td>58</td>
<td>5.6</td>
<td>0.193</td>
<td>2.0</td>
<td>5</td>
<td>Clay</td>
</tr>
</tbody>
</table>

No rock outcrop was observed in the study area; however, there was a negligible coarse fragment. As shown in Table 2, all mapping units showed that top soil stoniness and sub-soil stoniness were less than 5 percent and 15 percent respectively. There was no significant variation of stoniness in volume percentage for all mapping units, but there was slight increase in volume percentage with regard to depth.

**pH, Salinity and Sodicity:** The soil pH (H₂O) values were found in the ranges of 5 to 7.29. According to Dennis et al. (2005) pH classification, soil pH has shown strongly acidic to moderately acidic. The highest pH value as 7.29 was observed on mapping unit-7 and the lowest as 5.0 was recorded. Majority of mapping units have shown an increasing trend of soil pH with depth. This may be due to the higher buffering capacity attributed to the relatively higher organic matter content of the areas or it may be indicating a presence of vertical movement of exchangeable bases.

The salinity of soil measured as saturated extract ranged from 0.06 to 0.704 dS/m. The highest surface ECE reading was obtained on mapping units five and ten, which were both less than one. Due to the moderately acidic nature of the soils of the study area, the ECE values were negligible. Moreover, there was no significant difference in ECE values. This indicates that there would not be any actual and potential salinity hazard in the soils of the study area. In terms of Na⁺ hazard or sodicity of the soil, ESP differed from a minimum of 1.6 percent in mapping unit-7 to a
maximum of 6.53 percent in mapping unit-5. According to Charise and Gathiru (2003) soil classification as, majority of soil was found non-sodic, as carried on ESP value was less than 6 percent. Exchangeable Na were found in very low concentration in all mapping units and did not show significant variation as compared to the critical level that caused deterioration of soil structure and Na toxicity when the ESP was greater than 15 percent as indicated in Dent and Young (1981). Apparently, this is due to the high amount of annual rainfall at the study area which causes excessive leaching of basic cations and finally which results in soil acidity.

**Chemical Properties of Irrigation Water:** Table 2 shows water quality of wells measured in terms of pH, salinity and sodicity in the laboratory. The water quality characterized by pH value varied from 6.86 to 7.69. In all catchments the pH of water was neutral. However, the upper catchment (W1 and W2) showed lower pH value 6.86 and 7.08 when compared to lower catchments 7.69, 7.48 and 7.62 (W7, W8 and W9) respectively.

<table>
<thead>
<tr>
<th>Map unit</th>
<th>Well</th>
<th>Ca (meq/l)</th>
<th>Mg (meq/l)</th>
<th>Na (meq/l)</th>
<th>SAR</th>
<th>ECw</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper catchments</td>
<td>W1</td>
<td>1.44</td>
<td>1.2</td>
<td>0.36</td>
<td>0.31</td>
<td>0.21</td>
<td>6.86</td>
</tr>
<tr>
<td></td>
<td>W2</td>
<td>0.96</td>
<td>0.96</td>
<td>0.17</td>
<td>0.17</td>
<td>0.16</td>
<td>7.08</td>
</tr>
<tr>
<td>Middle Catchment</td>
<td>W3</td>
<td>0.96</td>
<td>0.48</td>
<td>0.22</td>
<td>0.26</td>
<td>0.14</td>
<td>7.69</td>
</tr>
<tr>
<td></td>
<td>W4</td>
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<td>1.2</td>
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<td>0.16</td>
<td>7.13</td>
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<tr>
<td></td>
<td>W5</td>
<td>2.16</td>
<td>0.72</td>
<td>0.17</td>
<td>0.14</td>
<td>0.18</td>
<td>7.14</td>
</tr>
<tr>
<td></td>
<td>W6</td>
<td>1.44</td>
<td>0.72</td>
<td>0.23</td>
<td>0.22</td>
<td>0.23</td>
<td>6.89</td>
</tr>
<tr>
<td>Lower catchments</td>
<td>W7</td>
<td>1.2</td>
<td>1.44</td>
<td>0.39</td>
<td>0.34</td>
<td>0.19</td>
<td>7.69</td>
</tr>
<tr>
<td></td>
<td>W8</td>
<td>0.48</td>
<td>1.2</td>
<td>0.14</td>
<td>0.15</td>
<td>0.09</td>
<td>7.48</td>
</tr>
<tr>
<td></td>
<td>W9</td>
<td>0.72</td>
<td>0.72</td>
<td>0.14</td>
<td>0.16</td>
<td>0.08</td>
<td>7.62</td>
</tr>
</tbody>
</table>

All electrical conductivity values measured were low; the maximum value was less than 250 μm/cm. The dominant soluble cation in the irrigation water was Ca$^{2+}$. The sodium adsorption ratio was very small for all sampling point.

This low salinity water, can be used for irrigation with most crops and most of the soils with little likelihood that salinity problem will develop. The water was also non-sodic, and it could be used for irrigation on almost all soils with little danger for development of harmful levels of exchangeable sodium.

**Flood Hazard and Drainage Investigation:** Field investigation also showed a moderate flood hazard for majority of mapping units on the basis of flood depth measurements with duration and information from soil landscape or geomorphic/landform. Result obtained from field measurements, it is evident that less than 25 cm depth of flood appeared less than month flood duration for all mapping units except mapping units 2, 3 and 4 which did not have any flood risk because of their elevation as result the flood limitation was considered slight.

On close observation of internal site drainage potential from a profile, soil with auger hole and wells depth of water table were measured for drainage criteria. Mapping units 2, 3, 4, 6, 9, 10, 11 and 12 had a depth in the range of 150-200 cm. This showed a slight limitation of drainage hazard. However, the rest of mapping units were having moderate limitation since it had a range of 100-120 cm water table depth for mapping units-1, 5, 7, and 8. This might be as a result of heavy textured soil and relatively flat topography of the study area.
Rating of Land Mapping Unit: Land evaluations ratings based on the description results in the table below are shown in Table 3. All mapping units were rated as class one (I) for effective soil depth, top soil stoniness, sub soil stoniness, soil salinity, soil alkalinity, water salinity and sodicity for all catchments (upper, middle and lower). In addition, the texture of the soil was found to be under Class II for all mapping unit except mapping unit-2 and 8, as they fell in Class II.

Table 3: Land evaluation classes

<table>
<thead>
<tr>
<th>Map units</th>
<th>Soil depth (cm)</th>
<th>Effective Soil depth</th>
<th>Texture</th>
<th>Stoniness</th>
<th>Salinity</th>
<th>Alkalinity</th>
<th>Flood hazard</th>
<th>Water table depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>2</td>
<td>0-20</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>3</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>4</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>5</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>6</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>7</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>8</td>
<td>0-20</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>9</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>10</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>11</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>12</td>
<td>0-20</td>
<td>I</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>II</td>
</tr>
</tbody>
</table>

The water table depth rating was found to be Class II for mapping units-2, 3, 4, 6, 9, 10, 11 and 12 while the others fell in class III. Moreover, flood hazards for all mapping unit were found to be Class II except mapping units-2, 3 and 4 which were found in class I.

Overall Evaluation: The final objective of the study was to develop irrigation land suitability map of the study area. To reach on one final irrigation suitable map, a cartographic model for each suitability criteria was developed. Based on this cartographic model, an overlay analysis was done and one overall irrigation suitable map was developed. Irrigation suitable map was derived by overlaying all parameter maps. The total area was found to be highly suitable with regard to stoniness, soil salinity, soil alkalinity, soil depth, water electrical conductivity and water alkalinity.

The spatial suitability assessment for irrigation based on overlaid maps of parameters shows that about 72 percent of the study area were potentially suitable for irrigation. Of the potential
suitable land, one percent was highly suitable, 28 percent was moderately suitable, and 43 percent was marginally suitable as shown in Figure 3.

Based on area delineated, percentage and area coverage were determined. From texture map, 11 percent (76.7 ha) and 89 percent (625.5 ha) were found to be heavy clay and clay which implies highly suitable and moderately suitable, respectively. Water table depth map shows that 120-150 cm depth were found 35 percent (244.86 ha) area coverage whereas water table depth of 150-200 cm were found 65 percent (457.43 ha). From flood hazard map had resulted into 76.7 percent (538.65 ha) and 23.3 percent (163.64 ha) moderately suitable and high suitable respectively.

On the DEM different types of colors were observed. The area with the same color means that those areas have the same surface elevation. The abrupt change of color indicates that there was a difference in elevation within short distance. From the DEM using GIS command (surface) the surface slope of the area was developed. This surface slope then grouped and a slope category was developed. The surface slope was categorized into six slope range, viz, zero to five percent, 5 to 10 percent, 10 to 15 percent, 15 to 20 percent, 20 to 25 percent, and >25 percent and this slope categories had an area of 606.54 ha, 53 ha, 17.52 ha, 6.59 ha, 0.000081 ha and 12.9 ha, respectively. Based on FAO suitability classification for surface irrigation, slopes were reclassified in the range of 0-2 percent, 2-5 percent, 5-8 percent, and >8 percent and the corresponding areas were found to be 107.34 ha, 499.2 ha, 9.63 ha and 86.12 ha respectively.

![Figure 3: Overall irrigation suitability map of the study area](image_url)

5. DISCUSSION

Sound information on soils, water and other land characteristics provide a basis for decision making on proper utilization and management of natural resources. The importance of land evaluation points to opportunities for influencing future developments of soils in the region using management techniques that are tailored to the characteristics of the landscape elements.
The total area was found highly suitable with regard to stoniness, soil salinity, soil alkalinity, soil depth, water electrical conductivity and water alkalinity. Mapping units-2, 3 and 4 were suitable with regard to flood hazard. All mapping units had limitations with regard to drainage limitation and flood hazards.

6. CONCLUSIONS

The land resource data, that have been generated, could be integrated through GIS techniques for effective irrigation planning in catchments. Most of the study area is suitable for irrigation (72 percent of the total area) and future irrigation development is feasible. The project area is especially suitable with respect to soil depth, soil salinity, soil alkalinity, stoniness and ground water quality which was class one (S1). Based on the finding of this study, it was clear that the main limiting factor for irrigation suitability in the area is drainage limitation for mapping units.

By a way of recommendation, in order to sustainably develop the area for irrigation development, the following points should be considered.

- Due to shallow water table depth and fine textured soil of the study area, the area has poor drainage and workability problems under excessive moisture regimes. These soils could be made more suitable by adopting improved drainage system, soil and crop management practices. Hence an appropriate drainage provision should be taken into consideration in further development.

- For the area which have slope above 8%, land leveling operation or soil conservation work have to be incorporated to break surface slope and to make it suitable for surface irrigation.

- In order to protect the flooding of lower catchment, watershed management activities including the construction of flood protection ditches on eastern boundary of the study area is recommended.

- Local interpolation for constructing Thiessen polygon had edge effect. To fully cover the surface of an interpolated area, some unknown points around the edges of the dataset would have to be extrapolated to exactly delineate the mapping units.

- The slope generated from SRTM-DEM does not represent the exact slope derivatives for the study area since it had low resolution. Precision could be improved if high resolution DEM is generated. Future work should take into consideration in using finer resolution image data.

- The validity of the spatial analysis depends on the database. Had more criteria and constraints, which affect irrigation suitability would have been considered in the analysis, the prediction would be more valid. The layers as indicated in the text were generated based on few factors.

REFERENCES


PART THREE: HEALTH AND HEALTH-RELATED ISSUES

Drug Resistance Patterns of Mycobacterium Tuberculosis from Smear Positive Cases in Eastern Amhara Regional State: A Facility Based Cross-sectional Descriptive Study
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¹ College of Medicine and Health Science, Debremarkose University; ² School of Medical Laboratory Sciences, College of Health Sciences, AAU; ³ Ethiopian Health and Nutrition Research Institute
Corresponding author: Ahmed Esmael, Email: esmaelahmed8@gmail.com

Abstract

Tuberculosis (TB) is a major public health problem in Amhara region, Ethiopia where the TB case detection rate is at 22%. This situation has been worsened by the emergence and spread of drug resistance strains which have been threatening efforts of TB control. The aim of this study was to assess the magnitude of drug resistance patterns of \textit{M. tuberculosis} in Eastern Amhara region, Ethiopia. A facility based cross sectional study was conducted among new and re-treatment patients (age ≥18 years old) from September 2010 to June 2011. Smear positive sputum samples were processed and decontaminated by the modified Petrof method. Primary isolation and drug susceptibility testing (DST) were carried out on egg based Lowenstein –Jensen media (LJ). Multivariate analysis using the logistic regression model was computed. In the present study, 230 study subjects were enrolled. Of these, 165 (71.8%) were new cases. The overall prevalence of drug resistance to at least a single drug was 77 (33.5%). The prevalence of multi drug resistance tuberculosis (MDR-TB) in new cases was 3 (1.8%); on the other hand the prevalence of MDR-TB in previously treated cases was 12 (18.5%). Overall resistance to streptomycin 62 (27%) was the highest followed by isoniazid 41 (17.8%). A high rate of drug resistance for main anti-tuberculosis drugs was observed on new and previously treated cases in this study. Previous exposure to anti-TB drugs and bacterial load were important determinants of development of drug resistance.

Key words: drug resistance, MDR, tuberculosis

1. INTRODUCTION

Currently, tuberculosis (TB) is the second most common cause of death due to an infectious disease [2]. Globally, 9.4 million incidents and 14 million prevalent cases occurred in 2010 [1]. Africa, more specifically Sub-Saharan Africa, faces the worst TB epidemic [2]. Poverty, Human Immunodeficiency Virus (HIV), delay in seeking treatment, and the emergence and spread of drug resistant cases (DR) particularly multi drug resistant cases (MDR) and extensive drug resistant cases (XDR) of tuberculosis have been mentioned as main factors to the current high load of TB [2, 36]. The emergence and spread of DR-TB strains on new and previously treated cases have been a global threat [2, 6-8, 10-13, 18-33]. For instance, Irfan et al. in Pakistan showed that resistance to one or more agents was noted in 39% of new cases and 79% of previously treated cases. Similarly, MDR-TB in new cases occurred in 10% of the strains whereas the occurrence was 69% in previously treated cases [21].
Development of drug resistance has been associated with different risk factors such as patients who have had a previous history of anti-TB drug exposure [21, 23, 25, 26, 32], treatment failure [25], cavitary condition [9], age group [19, 23, 26], ethnicity [23] and sex [25]. In the current situation, Ethiopia has been one of the 22 high TB burden countries [17]. The level of MDR-TB among new TB cases is estimated at 1.6% and 12% for previously treated cases [1, 17]. The highest rate was to streptomycin (S) (10.2%) followed by isoniazid (H) (8.4%) [31]. In Eastern Amhara, where 85% of the population resides in rural areas and most people live far from established health centers [35]. These conditions might be increase the transmission and spread of TB in the community due to lack of early diagnosis. So, this study will provide insight about drug resistance patterns among new and re-treatment cases and associated risk factors in Eastern Amhara regional state, Ethiopia.

2. MATERIAL AND METHODS

A facility based cross-sectional descriptive study was conducted among new and re-treatment pulmonary TB patients (age ≥18 years old) from September 2010 to June 2011 at Ethiopian Health and Nutrition research Institute (EHNRI-TB) laboratory, which is a national tuberculosis laboratory in Ethiopia. A total of 48 public health facilities were listed based on regular presence of DOTS, AFB (Acid fast bacilli) and patient flow. A stratified random sampling method was used to create different strata (referral hospital, district hospital and health centers). A separate sample unit was selected from each stratum using proportionate to size. Finally individual units were selected by simple random sampling method and a total of 43 sites were enrolled.

Single proportion formula with the prevalence of smear positive *M. tuberculosis* 286/100,000 [1] were used. So, a total of 230 direct smear positive study participants were enrolled through simple random sampling method. Only direct smear positive cases by Ziehl-Neelsen (ZN) staining were included. Morning type of sputum was subjected for digestion and decontamination by modified petrof method [34]. Then 0.2 ml of the processed sputum was inoculated on to Lowenstein –Jensen media (L.J) slants. All inoculated media were incubated at 37°C. The inoculated solid L.J media was inspected two times per day for the first two weeks while 3 times per weeks for the remaining 2-4 weeks [34]. All 230 direct smear positive cases inoculated in to LJ media were culture positive. The *M. tuberculosis* isolates were confirmed by colony morphology and different biochemical tests (nitratase activities, catalase and niacin test) [34].

The culture positive isolates were tested for anti-TB drug susceptibility testing by indirect proportional method as standard protocol. Colonies from surface of L.J medium were transferred into sterile test tube containing 6-8 glass beads. The suspension was adjusted to 1 McFarland standard. The final concentration of drugs were; 0.2 μg/ml for Isoniazid (H), 40 μg/ml for Rifampicin (R), 2 μg/ml for Ethambutol (E) and 4 μg/ml for Streptomycin (S) [34]. H37Rv were used as positive control while Start and end control as internal quality control. All activities like reagent and media preparation were carried out as standard operating procedure describe by Kent and Kubica [34].

Data entry and cleaning was done by a trained encoder using SPSS (Statistical Package for Social Science) version 16. Multivariate analysis using logistic regression model was computed. P < 0.05 was statistically significance.
The research proposal was reviewed and cleared by Institution of Review Board (IRB) of Addis Ababa University, Medical faculty. Informed consent was obtained from each study subject, no name and other identifier on the questionnaire.

3. RESULTS

Socio-Demographic Characteristics: A total of 230 smear positive respondents were enrolled in this study. Of these, 137(59.8 %) were males and 113(49%) were illiterate. The mean age of the respondents was 32.8 years old. Majority 75.7% (174), 57.8 % (261) were married and rural residence respectively. Farming was the means of livelihood for most.

Mycobacterium Tuberculosis Drug Resistance Profile of Study, Subjects: Out of 230 study subjects, 165 (71.7%) were new cases. The prevalence of resistance to at least single drug was 33.5 % (77). The overall prevalence of MDR-TB was found in 6.5% (15) isolates. The highest rate of drug resistance was to S 27 % (62) followed by H 17.8 % (41) (Table 1). Of previous treated cases (n=65), 4.6% (3) were default, failure 40 % (26), and relapse 55.4 % (36) cases. MDR-TB was found in 18.46 % (12) Cases; the highest being in failure cases 9.23% (6) (Table 1).

Table 1: Drug susceptibility patterns of M.tuberculosis among new and retreatment cases (n= 230) in Eastern Amhara regional state, Ethiopia, June 2011

<table>
<thead>
<tr>
<th>Resistance status</th>
<th>new case (%), n=165</th>
<th>retreated case (%),n=65</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any resistance</td>
<td>39(23.6)</td>
<td>38(58.5)</td>
<td>77(33.5)</td>
</tr>
<tr>
<td>Multi-drug resistance</td>
<td>3(1.8)</td>
<td>12(18.5)</td>
<td>15(6.5)</td>
</tr>
<tr>
<td>HR</td>
<td>1(0.6)</td>
<td>0</td>
<td>1(0.4)</td>
</tr>
<tr>
<td>HSR</td>
<td>1(0.6)</td>
<td>3(4.6)</td>
<td>4(1.7)</td>
</tr>
<tr>
<td>HSRE</td>
<td>1(0.6)</td>
<td>9(13.9)</td>
<td>10(4.4)</td>
</tr>
<tr>
<td>Resistance to one drug only</td>
<td>22(13.3)</td>
<td>18(27.7)</td>
<td>40(17.4)</td>
</tr>
<tr>
<td>H</td>
<td>7(4.2)</td>
<td>5(7.7)</td>
<td>12(5.2)</td>
</tr>
<tr>
<td>S</td>
<td>14(8.5)</td>
<td>12(18.5)</td>
<td>26(11.3)</td>
</tr>
<tr>
<td>R</td>
<td>1(0.6)</td>
<td>1(1.5)</td>
<td>2(0.9)</td>
</tr>
<tr>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Resistance to two drugs</td>
<td>13(7.9)</td>
<td>7(10.8)</td>
<td>20(8.7)</td>
</tr>
<tr>
<td>HS</td>
<td>7(4.2)</td>
<td>4(6.2)</td>
<td>11(4.8)</td>
</tr>
<tr>
<td>SR</td>
<td>4(2.4)</td>
<td>2(3.1)</td>
<td>6(2.6)</td>
</tr>
<tr>
<td>SE</td>
<td>1(0.6)</td>
<td>1(1.5)</td>
<td>2(0.9)</td>
</tr>
<tr>
<td>HR</td>
<td>1(0.6)</td>
<td>0</td>
<td>1(0.43)</td>
</tr>
<tr>
<td>Resistance to three drugs</td>
<td>3(1.8)</td>
<td>4(6.2)</td>
<td>7(3.0)</td>
</tr>
<tr>
<td>HSE</td>
<td>2(0.12)</td>
<td>1(1.5)</td>
<td>3(1.3)</td>
</tr>
<tr>
<td>HSR</td>
<td>1(0.6)</td>
<td>3(4.6)</td>
<td>4(1.7)</td>
</tr>
<tr>
<td>Resistance to all drugs</td>
<td>1(0.6)</td>
<td>9(13.9)</td>
<td>10(4.4)</td>
</tr>
</tbody>
</table>

H-isoniazid, S-streptomycin, E-ethambutol, R-rifambiclin

Multivariate logistic analysis was revealed that only previous drug exposure (P=0.000) and I' bacterial load (P=0.001) had significance association with the development of drug resistance.
However, sex, age group, residence, zonal location and educational level did not have any significant association with development of drug resistance (p > 0.05) (Table 2).

Table 2: Drug susceptibility patterns of smear positive cases (n=230) with different variables in Eastern Amhara region, Ethiopia, June 2011

<table>
<thead>
<tr>
<th>Variables</th>
<th>frequency (%)</th>
<th>Yes</th>
<th>COR 95% CI</th>
<th>AOR 95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-30</td>
<td>128(55.7)a</td>
<td>45 (35.2)a</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>51(22.2)</td>
<td>14 (27.5)</td>
<td>0.702-2.92(1.433) 0.324b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>31(13.5)</td>
<td>9 (29.3)</td>
<td>0.563-3.120 (1.325) 0.519b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;=51</td>
<td>20(8.7)</td>
<td>9 (45)</td>
<td>0.256-1.718 (0.663) 0.397b</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>137(59.6)</td>
<td>49(35.8)</td>
<td>0.440-1.360 (0.774) 0.373b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>93(40.4)</td>
<td>28(30.1)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bacterial load</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scanty</td>
<td>25 (10.9)</td>
<td>13 (52)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1+</td>
<td>89 (38.7)</td>
<td>18(20.2)</td>
<td>1.670-10.936 (4.273) 0.002b*</td>
<td>2.103-18.886(6.302) 0.001*</td>
<td></td>
</tr>
<tr>
<td>2+</td>
<td>76 (33)</td>
<td>30 (39.5)</td>
<td>0.669-4.125(1.661) 0.274b</td>
<td>0.660-5.250(1.861)</td>
<td>0.240</td>
</tr>
<tr>
<td>3+</td>
<td>40 (17.4)</td>
<td>16 (40)</td>
<td>0.593-4.452(1.625) 0.345b</td>
<td>0.640-6.508(2.041) 0.228</td>
<td></td>
</tr>
<tr>
<td><strong>Drug exposure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>65 (28.3)</td>
<td>38 (58.4)</td>
<td>2.470-8.370 (4.547) 0.000b*</td>
<td>2.763-15.068 6.452 0.000*</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>165 (71.7)</td>
<td>39 (23.6)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Number in parentheses is row percentage of respondents. I - reference category, b- p value of crude odd ratio

4. DISCUSSIONS

The overall drug resistance rate for one or more drugs was found in 33.5% (Table 1). A comparable level was reported in Saudi Arabia (29.7%), in South Africa (30.2%) and in Ethiopia (29.4%) [24, 26, 33].

In this study, 6.5% of resistance cases were MDR-TB (Table 1), which was higher than those previously reported in Iran (2.8%), but lower than in Saudi (20%), and in Pakistan (47%) [21, 23-24]. Similarly, this study depicted that mono drug resistance was found in 17.4 %, the highest being to S (Table 1). A comparable level of single drug resistance was reported in Nigeria (15%), in Kuwait (15.3%) and in Taiwan (15.9%) but lower level of single drug resistance reported in Pakistan and Ethiopia (7.9%) [18-20, 27,33]. This might be explained as variations in the studied population and variation on load of drug resistance strains in different geographical location.

In the present study, drug resistance for one or more drugs in new cases was 23.6% (Table 1). This finding was higher than previous studies in Kuwait (10.3-15.3%) and in Ethiopia (15.6%) but lower than in Myanmar (29.3%) and in Pakistan (39%) [20-21,28, 30].

In addition, this study revealed that 1.8% MDR-TB cases were observed in new cases (Table 1). This was higher than previous studies done in Ethiopia (nil to 1.2%) but lower than in Turkey
(4.4%), in Nigeria (4%), in Myanmar (4.2%), and in Pakistan (10%) [13, 21, 25, 27-28, 33]. The high rates of resistance among new cases might be indicating that either drug resistant strain is circulating and transmitted in the community. Another explanation may be a lack of appropriate controls and prevention systems, including delays in diagnosis that favour transmission of resistance strains.

Similarly, in the present study, drug resistance for one or more drugs observed in previously treated case was (58.5%) (Table 1), which was higher than previous studies in Ethiopia (53.6%), and in Myanmar (45%) but lower than in Pakistan (79%) [21, 28-29]. Moreover, 18.46% MDR-TB cases were observed in previously treated cases (Table 1). A comparable level of MDR-TB cases were observed in Myanmar (18.4%) and in Nigeria (18%) [27-28]. A high load of resistance among re-treatment cases might be indicated that resistant mutants naturally occurring in the mycobacterial population were selected and multiplied by inadequate or interrupted treatment with anti-tuberculosis agents.

Many studies showed that drug-resistant TB had a statistically significant association with exposure of anti-tuberculosis drugs [21, 23, 25-26, 28]. Our finding also observed that the odds of favoring drug resistance in previously treated case were 6.4 times more than new cases (Table 2).

Studies showed that DR-TB cases were significantly associated with age group [19, 23, 26]. The WHO 2010 report concluded that the harboring of drug resistant strains might not be associated with age group. They suggested that there could be a relationship between age group and history of the TB epidemic. For example, if there is a high rate of drug resistant strains in a younger age group, it could be that TB is new to that particular area or country. In addition, if the affected age group is older, WHO suggests that it may be due to a long history of TB in the area [1]. Our study also showed similar finding.

Surucuoglu et al. in Turkey reported that more males than females significantly harbour resistance drug strains [25]. While the WHO 2010 report showed that the overall risk of harbouring drug resistant strains was not influenced by sex, but suggests that the disparity could be due to differences in access to health-care services or exposure to other risk factors [17]. Present findings are also consistent with this report.

Presence of cavitary conditions and high bacillary load in the lungs contribute to the emergence of drug resistance strains [9]. However, in the present study, bacterial load (1⁺) independently contributed 6.3 times for the development of drug resistance strains (Table 2). The authors suggest that it may be due to poor socio-economic status. Further large scale research will be required to come to a definite conclusion.

5. CONCLUSIONS AND RECOMMENDATIONS

The high rate of resistance of main anti-tuberculosis drugs was observed on new and previously treated cases in this study. This situation might threaten efforts of TB control activities and further aggravate development of MDR-TB. Previous exposure to anti-TB drug and bacterial load were important determinants of development of drug resistance. So it is essential to address the problems of development of drug resistant strains of TB by establishing good TB control programs (DOTS and DOTS plus). Strengthening basic TB programs such as good patient adherence, administration of good quality and dose combination of anti-tuberculosis drug and improving infection control measures have been a crucial role.
6. REFERENCES


PART FOUR: GOVERNANCE AND HUMANITIES

Master Planning, Land Management and Implications for Urban Sustainability in Emerging Towns of Ethiopia: The Case of Arba Minch Town

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Abstract

Sustainability of urbanization requires planned development of urban centers, competent institutional frameworks in place and proactive management and governance strategies. In light of this, the paper examines the practice of master planning and the extent of its implementation and challenges of land management in Arba Minch as emerging regional town in the Southern Nations Nationalities and Peoples Region (SNNPR). The data for the study were generated by household survey of 340 household heads selected through systematic sampling, key informant interview with individuals actors in planning, management, informal land transaction in the town. Personal observation and extensive review of various policies, plans, and directives was made in order to assess the issues planning and management of urban land.

The paper revealed that the master plans prepared so far for the town have been implemented; however, could not adequately achieve the primarily intended goals such as joining the two settlements i.e. Secha and Sikella in the first master plan, for instance. The study also showed that archaic land information management system, informal land acquisition, corruption, land speculation and land related conflicts have become the challenges of land management in the town. These problems are associated with top-down planning process and weak institutional frameworks. These all imply that there is an urgent need for giving adequate attention to the planning approaches and management systems of urban land before things get out of control as it is the case with the oldest urban centers of varying size in Ethiopia. Therefore, the concerned bodies who are responsible of planning, implementation and management of land have to be curious whether what is being carried out is intended to bring sustainability or otherwise. This is mainly because the growth of the town is irreversible and the town is continue to expand spatially, socially and in economic spheres which all together will pose unforeseeable challenges.

Key words: master planning, land management, urban sustainability, emerging towns

1. INTRODUCTION

Urban areas, mainly of developing countries, are growing largely at unprecedented and challenging pace and rapidity by posing serious challenges. Since they are places where challenges and opportunities of development meet, they need to be adequately planned and effectively guided by these plans in order for enabling their expansion, functional specialization and cultural expression and above all sustainability (Devas & Rakodi, 1993). Therefore, urban planning is an important tool to guide the growth of urban areas elsewhere. However, challenges and priorities of planning exercises are different (UN-Habitat, 2009). The planning tradition of most of African countries followed the European tradition owing to the past colonial history of the continent (Devas, 1993).

The relatively long tradition of planning practice in Eastern Africa indicates that there is an understanding of physical land use planning which mainly comprised of master planning.
planning and building standard and regulation and a system of development control. Master plans, sometimes named as ‘end-state’ plans or ‘blue-print’ plans, refer to the physical plans that depict on a map the future scenario of the town when the plan is fully implemented (Hirasskar, 2007). However, master plans have been critiqued by scholars and practitioners for the fact that they are rigid, top-down, professional and technocratic exercises with little or no participation of masses. Hence, structure planning preferred to master planning, this is more flexible than that of master planning. Yet, master planning practice tends to dominate the planning practice of developing countries and that of East Africa in particular. Whatever maybe the case, master plans help guide urban development and expansion (Devas, 1993).

It has been observed recently that in Ethiopia urbanization is taking place at a much faster pace than population growth owing to decentralization (regional and municipal decentralization) in the post-1991 period (Gulyani, et al, 2001). Even though the rate of urbanization is the highest for Ethiopia compared to African countries; yet, it is the least urbanized and at the same time its most urban centers are predominantly unplanned i.e they came into existence by historical accident. The predominance of spontaneous development urban centers in Ethiopia has been posing a substantial need for planning intervention for urban centers of Ethiopia (Birke, 1997). Therefore, it is evident that master planning is very vital for urban development and management in Ethiopia and elsewhere.

Though Ethiopia is one of the least urbanized countries in Africa; its rate of urbanization is quite dramatic. In Ethiopia, after the Federal Government has a vested interest in the issues of land, planning for urban centers is made by the National Urban Planning Institute (NUPI); but the urban centers in the country are supposed to be managed by their own town administrations and municipalities. Municipalities are local governments in relatively bigger urban centers in Ethiopia. Among different roles and responsibilities of the managing and governing bodies, in different-sized urban centers, the central issue of the municipal task is the management of urban land. This is the most challenging task planning and managing bodies because there are competing and conflicting interests with respect ownership and use of urban land (Birke, 1997; Gulyani, et al, 2001).

Arba Minch was very much fortunate to have master plans right from its establishment in the 1960s as a town; unlike many other older towns of Ethiopia which have been spontaneously developed and continue to pose challenges for planning and management. Consolidated research works in the area of land use planning and management are lacking in the town. Some of the studies made are sporadic which were focusing on some specific issues like housing, waste management and the like. For instance, studies made by some researcher of urban management mainly focused on Residential Land Management (Dimire, 2008) and Rental Housing Management (Atnafu, 2008). This is an indication that there is paucity of the ready-to-use studies and consolidated information for management of land in the town. Against this backdrop, this study is aimed at dealing with land use planning and management practices & problems in Arba Minch town. Hence, the study on master planning and management is intended could fill the knowledge and information gap in the implementation of master planning and also could help managers, decision makers and other stake holders in master planning and management by providing valuable information about the missing but important element.

Therefore, the central theme that need to be addressed in this particular study include the issue of master planning, land management and their implications for urban sustainability in Arba Minch.
town. Thus, the questions that need to be addressed in this study include the following: (1) To what extent the master plans so far prepared for Arba Minch town were effective? (2) What are the challenges of land management in Arba Minch town? (3) How master planning and land management activities are institutionally organized? (4) What is the implication for future planning and management exercises in the town?

Objectives of the Study: The general objective of this research was to assess the practice of master planning and challenges of land management in Arba Minch town, Southern Nations, Nationalities and People’s Regional State thereby pointing its future implications for sustainability. More specifically, the study was intended to:

• Assess the extent to which master plans prepared for the town attained the objectives in the town
• Identify the challenges related to land and their management status in the town
• Discuss the institutional frameworks and arrangements for master planning and land management in the Town
• Indicate the implication for the future planning and management practices with respect to the urban land in the town.

2. METHODOLOGY

Study Area: Arba Minch town is one of the emerging towns of Ethiopia which is located in Southern Nations, Nationalities and Peoples regional state of Ethiopia. The name Arba Minch was derived from the “forty springs” which means a collection of more than forty springs which are located in the Arba Minch natural forest. Astronomically Arba Minch is located at 6° 04’ North Latitude and 36° 40’ East Longitude. It is found in Gamo Goffa zone and used as a zonal capital of the zonal administration in Southern Nation’s Nationalities and Peoples Regional State of Ethiopia. It is located at about 505kms south of Addis Ababa and 275kms of Awassa, the regional capital (Arba Minch Municipality (AMM), 2006). Arba Minch is a town in Southern Nations. Nationalities and People’s Regional State. It consists of the four administrative sub-cities namely Secha, Sikella, Abaya and Nechsar and these four sub-cities are divided into eleven kebeles. According to Central Statistical Authority (CSA) (2008), Arba Minch has a total population of 74,843, out of which 39,192 were males and 35,651 were females. Its annual average growth rate of population between the Second (1994) and Third (2007) Ethiopian censuses is 4.8% per annum.

Study Design: The research was conducted and the data were generated in 2008/9. It was based on both primary and secondary sources of data set. The primary data was collected from direct interviews with individuals who are directly related with planning, management, allocation of land (individuals from institutions, departments and the municipality responsible for land use planning and management of the town) and persons who lived for long in the town; personal observation and response to questionnaire administered in a household survey for 340 sample household heads selected from the four sub-cities of town.

The sampling procedure was based on the data obtained from the Arba Minch town Municipality which contains a detailed kebele (neighborhood) population. First, randomly, the four kebeles namely Chamo, Mehal Ketema, Dil Fana and Kulfo were selected which were representing the old and new settlements. The numbers of households were determined by proportional allocation and were selected using systematic sampling. Based on the response rate, 10.2% of the total
households of the study population were involved in the survey. Since document review is equally important method of data acquisition, secondary data was obtained from various institutions and offices.

The data collected via survey, key informant interview, observation and document review were analyzed by employing descriptive methods and to some extent using tables and simple statistical techniques such as tables, percentages and maps. Despite the efforts made to triangulate the research using data from various sources; this research is not out of limitations.

3. ANALYSIS AND DISCUSSION

Assessment of Master Plans of Arba Minch: Unlike many other towns of Ethiopia, Arba Minch was fortunate enough to have a master plan as soon as its establishment as a town with an estimated population less than 3,000 inhabitants. Thus, the first master plan for Arba Minch was prepared by Mr. Powell in 1963. Mr. Powell was professional town planner who was working for the Ministry of Interior at the time (NUPI, 1989). Accordingly, the main aim of this master plan was the joining of the two separate settlements (i.e. Secha and Sikella) and thus creating a sole town known as Arba Minch. Functionally, this plan was mainly developed/prepared for residential and administrative purposes (NUPI, 1989).

The second master plan for the town was prepared in 1967. The Italian town planning consultants (CISU) prepared the second master plan for Arba Minch town in the mentioned year. According to NUPI (1989), like the Powell’s master plan of the 1963, this master plan also envisaged the joining of the two settlements or parts of the town (i.e. Secha and Sikella) together as its main objective. Therefore, with this plan the two parts (Secha and Sikella) started to be considered a sole town, Arba Minch.

The 1967 master plan for Arba Minch town was revised and modified in the year 1980. This plan was a bit detailed than the previous ones and which was revised by the Ministry of Urban Development and Housing (MUDH). This plan was prepared at relatively larger scale hence detailed than the previous ones i.e. it was prepared at the scale of 1/2500. The 1980’s revision and modification introduced the parcellation plan. The parcellation plan was mainly for areas in between the two centers (i.e. Secha and Sikella) and the southern part of sikella (NUPI, 1989). This detailed plan was used and the important parts of it were incorporated into the 1989 master plan particularly concerning road-network and the distribution of some residential areas. The National Urban Planning Institute1 (NUPI) had prepared the third master plan for Arba Minch in 1989.

This master plan envisaged the centre of the town to be at its geographic center though had limited implementation. The main limitation of this plan was that it was prepared only at the scale of 1:10,000. Failure to prepare detailed plans of this master plan made its implementation very difficult. Because of this difficulty, in consequence, most part of the development trend of the town followed the 1980 modified and detailed master plan of MUDH. The time frame of this

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1The National Urban Planning Institute (NUPI) has now reinstituted under the Ministry of Urban Development and Construction as Federal Urban Planning Institute (FUPI).
master plan was for about 7-8 years with the specified objectives in guiding the expansion and development of the town for the specified years. Land use category of the town in the master plan of 1989 could be seen from Figure 1 below.

Figure 1: The Land Use Map of Arba Minch Town (1989)
(Source: Ministry of Works and Urban Development/MWUD/)

In 1995 the National Urban Planning Institute (NUPI) has prepared another master plan for Arba Minch town based on the analysis of the cumulative effects, achievements and failures of the previous plans. Unlike the previous plans; this master plan includes the two self-sufficient, isolated settlements located north and south of Kulfo River. According to this plan, the existing two parts of the town (Secha and Sikella) of Arba Minch town and the scattered settlement between the two was consolidated to form reorganized districts into a single town. The previous plans had the aim of joining the two parts of the town. However, this master plan envisaged the two towns to develop following natural development trend as peripheries to both Secha and Sikella. The town was planned to have a semi-circular development of settlements at their edges. The center of the town was planned to be shifted to both banks of Kulfo River. Common services and administrative buildings which receive frequent visits were planned to be located within or near to the center as much as possible.
Institutional Frameworks for Master Planning and Land Management

The planning approaches involved for the preparation of master plans for Arba Minch town was clearly and dominantly "top-down". For the preparation of five respective master plans of the town, the central government was responsible. The first master plan was prepared by a town planner from the Ministry of Interior. The second master plan (1967) was prepared by the Italian town planning consultants under the supervision of the central government. The second master plan of the town was revised and modified by the Ministry of Urban Development and Housing (MUDH). The last two master plans (1989 and 1995) were prepared by the National Urban Planning Institute (NUPI). From these all planning experiences for the town, it is possible to conclude that the planning approach was typically "top-down", which mainly focused on Survey-Analysis-Plan-Implementation approach of master planning. This method did not give adequate room for community participation or consultation in the process of planning (either in planning, implementation, monitoring and evaluation).

Table 1: Summary of master planning for Arba Minch Town

<table>
<thead>
<tr>
<th>No</th>
<th>Master plan</th>
<th>Time Frame</th>
<th>Prepared/ revised by</th>
<th>Main Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The 1963 master plan</td>
<td>-</td>
<td>Mr. Powell</td>
<td>Joining Secha &amp; Sikella</td>
</tr>
<tr>
<td>2</td>
<td>The 1967 master plan</td>
<td>20 years</td>
<td>CISU</td>
<td>Joining Secha &amp; Sikella</td>
</tr>
<tr>
<td>3</td>
<td>The 1980 master plan (Revised)</td>
<td>-</td>
<td>MUDH^2</td>
<td>Parcellation plan</td>
</tr>
<tr>
<td>4</td>
<td>The 1989 master plan</td>
<td>7-8 years</td>
<td>NUPI</td>
<td>Envisages the center of the town to be at its geographic center</td>
</tr>
<tr>
<td>5</td>
<td>The 1995 master plan</td>
<td>10 years</td>
<td>NUPI</td>
<td>Shifting the center to both banks of Kulfo river</td>
</tr>
</tbody>
</table>

Source: NUPI (1989; 1995)

As the preparation mandate of the master plans was dominated by the central government, the implementation, monitoring and evaluation mandate was at the same time controlled by the central government. The latter issue is less practical in reality even though the mandate was of the central government. Insignificant rooms were given to the local government (Zonal, Woreda administrations) and the municipality to deal with such matters.

Appropriate institutional framework along with other relevant factors helps to facilitate the efficiency and effectiveness of urban land management particularly by using transparent procedures, coordination and cooperation between and within institutions (Birke, 1997; UN-Habitat, 2009). The relationship between Arba Minch Town Municipality and Arba Minch Town Administration is essentially political. Thus, the Town Administration controls the activities of the Municipality from political perspectives. That means if some activities of the municipality

^2Now the Ministry of Urban Development and Housing (MUDH) is restructured as Ministry of Urban Development and Construction (MWDC).
will have negative political effect or connotations, these will not be effective or will not be approved by the administration.

The land management aspect of the town could also be seen from within this framework. The relationship between Arba Minch Town Municipality and Gamo Gofa Zone Works and Urban Development Department is essentially technical. Thus, the Department monitors the actions and activities of the Municipality whether they conform to the set of rules, regulations and standards. In land management, it monitors, for example, land allocation for different functions are in line with the master plan or not, buildings at different sites according to the standard design or not, whether the lease regulation is implemented properly or not, etc. Both of them are accountable to the Gamo Gofa Zone Administration. The Zonal Administration intervenes in matters of land management of the municipality whenever it deems necessary.

In general, the problem with the organizational structure is that there is little decentralization of powers down to the sub-city levels and then to kebele levels. The Five Years Strategic Plan of the municipality clearly stated that there should be a municipal organ in four sub-cities in the town each of which having eleven staff members and its own finance. Yet there is no structure either at sub-city or kebele level to effectively manage the land resource by ensuring good governance at the grass root level. Such structural organization may help in enhancing the land management and administration of the town to alleviate the existing problems of the town. In general, the power of the municipality and its agencies can best be explained within the framework of deconcentration, devolution or delegation. The principle, after the reform of towns in the SNNPR in 1995 E.C, is devolution of adequate power to the municipalities. However, in reality from the actual existing municipal functions and activities of its agencies the decentralization type is delegation of power to the municipality.

Aspects of Land Management in Arba Minch

Management of Land Information System: The management of land information system is a major and integral component of land management and administration for urban centers in particular (UN-ECE, 2005). Land related information is an important resource that must be managed efficiently in order to maximize potential benefits that can be obtained from land. According to Lamba (2005), land information management strategies are concerned with the effective management of land information resources to achieve specific objectives and improve decision making in urban centers.

In Arba Minch town the duty of land registration was carried out, previously, by the Land Administration Department of the Municipality but at present it is carried out by the Cadastre Unit of the Land Administration and Supply Agency of the Arba Minch Municipality. Land registration in the town has started two years after its establishment as a town in 1965. However, the problem is that yet the exact number of plots in the old registration system was not known. This clearly shows poor registration and documentation and data management system of the town owing to weak technical, financial and human resources, lack of coordination and commitment of different stakeholders in the area of land information management in the town. Even at present data on land in the Arba Minch Municipality are disorganized and not standardized so that it can be used for decision making, conflict resolution and in general the management of land in the town.

The Municipality of Arba Minch town has started cadastral survey of the town since 2007 and yet completed surveying only for two sub-cities i.e. Secha and Abaya. The information included
in the survey is locational, socioeconomic and building characteristics. However, according to Mabogunje (1992), a cadastre is expected to record the coordinates of the parcel boundaries. In Arba Minch town, the cadastral team uses old plans, subdivision plans for undertaking the survey. For cadastral survey large scale maps are required, usually at the scale of 1:1,000. What can be understood from the above discussion is that land registration, documentation and cadastral survey of Arba Minch town is at infancy level. Even though the initiative of undertaking the cadastral survey (a half-way cadastre) is a rewarding endeavor in the town; however, there are many factors that bottleneck the effort.

**Land-Related Conflicts and Management:** The information on land use conflicts was obtained from the Arba Minch Town First Instance Court. Semi-structured interview questions along with format were prepared to access data from the court on aspects of land conflicts in the town for the last four years (1997-2000 E.C). As it can clearly observed, the number of reported cases of land use conflicts in Arba Minch town are increasing. Thus, in the year 1997 E.C, when the court started its function, the number of reported cases of land use conflicts was only nine out of which six were resolved and the remaining three transferred to the next year.

In the year 1998 E.C, the reported cases were more than quadrupled (42), out of which 34, resolved and the remaining transferred to the next year. In the year 1999 E.C, the number of reported cases increased to 147, out of which only 52 were resolved and the remaining transferred to the next year. By the same token, in the year 2000 E.C, the number of reported land conflicts in the town increased to 173, out of which 86 were resolved while the remaining 87 cases not resolved, transferred to the next year.

Thus, it is clearly observed and understood that the cases of land use conflicts reported to the court are increasing at increasing rate which is becoming an important issue of concern of the court of the town. According to the Work Process Expert of the court in the Registry and Statistics Section of the court, the major causes, for the reported land use conflict cases in the town were mainly associated with the management of land information system of the municipality. In this regard, more specifically, land registration and particularly, title deed registration with double issuance of title deed for a single plot. The other cause is boundary transgression of neighbor plot holders and selling of the single plot for two or more individual by using illegal and informal channels of land transaction in the town.

![Figure 2: Reported, resolved and transferred cases of land use conflicts in Arba Minch Town for four years (1997-2000 E.C)/ Source: Computed from Arba Minch Town First Instance Court (2008)](image-url)
Methods of Land Acquisition by Residents: Method of land acquisition is an important element to study land management aspect of the town. The method by which land is acquired by respondents in Arba Minch town is given as follows. Accordingly, nearly 2/3rd (64%) of the respondents acquired their land through municipal allocation where as 19.78 % obtained their land through informal land transactions, and 12.76% acquired through inheritance from relatives, 2.94% have got it by renting and the remaining 1.18% acquired through gift from relatives/friends. Table 6.4, presents the method of land acquisition by respondents in Arba Minch town.

Table 2: Method land acquisition by respondents

<table>
<thead>
<tr>
<th>Method of land acquisition in Arba Minch town</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inheritance</td>
<td>41</td>
</tr>
<tr>
<td>Informal land transaction</td>
<td>67</td>
</tr>
<tr>
<td>Municipal allocation</td>
<td>218</td>
</tr>
<tr>
<td>Gift from relatives/friends</td>
<td>4</td>
</tr>
<tr>
<td>Renting from person</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>340</td>
</tr>
</tbody>
</table>

Source: Household Survey, January 2009

From the method of land acquisition one can easily understand that informal land transaction is in the second place which is one of the most important method of land acquisition in Arba Minch town. This might be associated with either the shortage of land to be provided and to satisfy the demand for land or the failure of the municipality to satisfy through the formal channel of land delivery system. In principle, according to the rules and regulations, land transaction between individuals is prohibited. But, what is sold and bought is the property; not the land, on the land and then transferred to the buyer by the municipality. Then, the buyer becomes the owner of the property thereby the lessee of the land, for example, for 99 years if it were for residential purpose.

Informal Settlement and Land Management: Informal settlement in the form of squatters and illegal settlements has been observed in Arba Minch town particularly in Sikella, Secha and Abaya sub-cities. The extent of informal settlement in the remaining two sub-cities of the town was minimal. Expansion of illegal settlements in the town is one of the major emerging land use planning and management problems facing the municipality; even though it is not a widely observed phenomenon. According to the Head of Land Administration and Supply Agency of the municipality, for instance, during the years 1995-1999 E.C., on average, 300 squatters were registered in each year. Within the years mentioned, totally there were 1,500 squatters registered (Dimire, 2008).

To combat and control the problems of squatter settlements in the town, the municipality has taken measures. These included demolishing and regularization of these settlements. Accordingly, from 1995-1999 E.C., out of 1,500 registered squatters, 1,000 were demolished, 150 were regularized and no decision was made on the remaining 350 squatters. Closely related with the problems of informal settlements in Arba Minch town, was illegal occupation of land for residential housing construction. In this regard, the measures being taken in the town were demolishing, expropriation of property and legal punishment.
Informal Land Transaction and Land Speculation: As Mabogunje (1992) observed from the nature of urban land market situation of Sub-Saharan Africa, “the constraints of making land easily available through the formal governmental mechanism were such as to force people, desperate to provide themselves with shelter, to seek other avenues of gaining access to land”. Due to this the informal market is dominant in matters of land transactions and transfers elsewhere in Sub-Saharan African countries. However, the challenge with respect to the study of informal land market is the lack of information. In particular there is lack of information as to the volume of transactions, those who involved in, their general pattern and distribution within the town, and their prices.

For this particular study, respondents who got land through informal land transactions were asked to specify the reason why they bought it. Accordingly, the majority (more than half) of the respondents reported that they bought the land because of the delay of the municipality to provide land. 17.91% bought for the fear of losing the lottery or chance of getting plots, 14.93% were uncertain about the municipality to give them land and the remaining 11.94% bought land through illegal channel for other reasons.

With the expectation of getting more profit from land people in the study area are applying to obtain land from the municipality second time or third time. This is one of the reasons for the delay of land acquisition because the municipality has the responsibility to make sure that an applicant has no land in the town obtained through any channel of land acquisition.

**Table 3: Distribution of respondents by reasons for buying land**

<table>
<thead>
<tr>
<th>Why did you choose to buy the land through informal transactions?</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
</tr>
<tr>
<td>Because of delay of the municipality</td>
<td>37</td>
</tr>
<tr>
<td>Because I was uncertain about the municipality</td>
<td>10</td>
</tr>
<tr>
<td>For fear of losing the lottery chance</td>
<td>12</td>
</tr>
<tr>
<td>Other reasons</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
</tr>
</tbody>
</table>

Source: Household Survey, January 2009

Key informant interview with the land brokers, land buyers, residents and different experts has confirmed the prevalence of huge volume of informal land transaction and the preference of it by many of those who look for land and able to afford. Thus, from the situation above, it is possible to identify actors and beneficiaries in the informal channel of land transaction. Thus, the informal actors are land holders (speculators), land brokers and land buyers. Land holders and land brokers benefit more because of the price of land and the demand for the land is ever increasing in the town from time to time.

4. **CONCLUSIONS AND RECOMMENDATIONS**

Managing the urban land has become a serious challenge since it is the space over all urban activities carried out. This made planning and management of the town very vital. With this view, this research is undertaken with the aim of assessing the land use planning and management practices and problems in the Arba Minch town as a newly emerging regional town of Ethiopia.
It has been understood that the master plans for Arba Minch town could not adequately achieve the primarily intended goals. However, the attempts were made to guide the development and expansion of the town in the course of its development and expansion mainly allocating for various functions; not for the intended spatial development. The preparation of the master plans was centralized being a top-down, based on Survey-Analysis-Plan-Implementation process, professional exercise with giving little emphasis on the existing and evolving situations of the town, insignificant or very limited community participation or consultation.

Urban land management is closely linked planning for management has to precede planning. In Arba Minch, land management challenges such as land-related conflicts, archaic land information management, informal land acquisition, proliferation slums and squatters and land speculation. These all call for improving the planning and management of urban land in the town. Fortunately, while this research was conducted, the SNNPR Bureau of Works and Urban Development together with the town began the preparation of structure planning. Moreover, the researcher recommends that efforts need to be made to make the planning and implementation process participatory, all-inclusive and collaborative enough so that the sustainability of the town will be ensured, competent and responsible institutional frameworks for responsive and proactive management land and land related issues of the town. Finally, it is stressed that there should be proper monitoring and evaluation strategies in place in order for responding to the emerging and evolving challenges of plan implementation and land management in the town.

REFERENCES


Socio-Economic Marginalization of Craft Workers: The Case of Dembecha Woreda, Amhara Region

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Abstract

Handicraft working, production of crafts on the basis of indigenous knowledge, is omnipresent and believed to have long existence which could stretch back to the very down of history. Despite this scenario, handicraft workers have often been mentioned as marginalized groups in Ethiopia. Their experiences of marginalization vary in its factors, form and degree across time and geographical areas. Though craft workers have provide inevitable craft products which can be labelled as pillars for the general life setting of the people, they have been treated at the margins of benefits in Dembechaworeda of west Gojjam zone, Amhararegional state of Ethiopia. The experience, in the study area, ranges from total deprivation to ideal prejudice. The general objective of this paper is to investigate factors and dimensions of handicraft workers’ socio-economic marginalization in Dembechaworeda, Amhara Region of Ethiopia. The paper uses ethnographic methods to collect and analysis primary data. Participant observation and in-depth interviews with 39 informants are mainly employed during two months of fieldwork. Secondary sources are used to supplement fieldwork data. Potters, weavers, blacksmiths and tanners of Dembechaworeda have been restricted to own agricultural land, to share foods and drinks, to sit at communal gatherings, and marriage with non-craft workers. Even they thought to be different in creation. These are due to myths about their origin, association with evil eye, negative characterizations and normative assumptions upheld under the vein of social norms by the dominant people. The study revealed that the socio-economic status of the ‘specialists’ has changed overtime, mainly due to the approbation of land rights since 1974 and expansion of ‘modern’ education. However, they are not considered as full social persons. In addition, economic change and/or shift has impacted the continuity of crafts and associated values even without significantly altering forms of marginalization: they are still despised at least through contemptuous feelings and ideological explanations. Finally, since crafts have symbolic meanings, threat to handicraft working is threat to the culture and identity of the people at large.

Key words: marginalization, craft working, artisans

1. INTRODUCTION AND BACKGROUND

Handicraft working, production of crafts on the basis of indigenous knowledge, is omnipresent and believed to have long existence which could stretch back to the very down of history. However, they have been mentioned as marginalized groups in Ethiopia. Being identified by their “occupation or notional occupation, craft workers in Ethiopia are socially excluded, economically disadvantaged, spatially segregated, culturally subordinated and politically disempowered” (Pankhurst and Freeman 2001). The phenomenon of marginalization is so wide spread that it has been described as a ‘pan-Ethiopian cultural trait’ (Levin 1974:56). However, the scholars have been in controversy about their origin, identity and the reasons and causes of the marginalization. Marginalization of craft workers shows variation in its form and degree across ethnic groups in Ethiopia.

This paper examines the forms and causes of craft workers in Dembecha Woreda. Dembecha Woreda is located at a distance of 350km away from Addis Ababa and 205km from Bahir Dar, capital city of Amhara Regional State. The woreda is surrounded by other woredas virtually with
the same socio-cultural background, but probably it is the woreda where large proportion of craft workers live. The woreda shares borders with Burienbora in the west, JabiTehnanworeda in the northwest, Biheg in the north and with East Gojjam in the east and south. The socio-cultural and economic condition of the people in Dembecha woreda generally owes to rural ‘traditional’ way of life. Socio-cultural relations and organizations embodies kinship, family, marriage, and spatial arrangements. Economically, the majority of the woreda’s populations are sedentary agriculturalists. They largely depend on cereal farming which is practiced by Ox-drawn plough. Many families in the town are engaged in small scale trade. There are also artisans engaged in tanning, weaving, pot-making and blacksmithing. Though well-organized census of artisans had not been carried out, office of Small Scale and Micro Finance Enterprise estimates the total number would be 400 households (nuclear family). Artisans are found scattered in rural areas. This paper, however, deals with marginalized artisans who reside at the two outskirt villages of Dembecha town, Wotebet and ArogeAmba.

In Dembecha Woreda, craft workers can be depicted as marginalized groups. They have been deprived of socio-cultural, political and economic advantages that the majority could enjoy. According to some craft worker informants restriction to own land, sharing of food and drink, setting together in communal gatherings and marriage with non-craft workers were critical variables which underplay the maintaining of marginalization. In fact, there was remarkable change in the in societies’ attitude and feeling towards craft workers. But they do not become part and parcel of the society.

Still to be considered as marginalized, craft workers in Dembecha woreda have provided inevitable craft products which can be labelled as pillars for the general life setting of the people. One of the questions that this chapter of the paper tried to address is that if they are necessities for the general life setting of the people, why is it that craft workers are marginalized? Furthermore, the paper examines manifestations of socio-cultural and economic forms of marginalization through time.

2. METHODS

In this research both primary and secondary sources are used. Secondary sources, collected from different articles, books, periodicals and proceedings, are used to supplement fieldwork data. The paper uses ethnographic methods to collect and analysis primary data. The field work has carried out from November 26, 2010 to February 20, 2010.

The major research villages are called Wotebet and ArogeAmba. The villages are selected for different reasons. At the first place, it was due to the number and settlement pattern of craft workers. Secondly, the composition of different craft workers, weavers, potters, blacksmiths and tanners was taken into consideration. Thus, group settlement and presence of craft workers who engaged in different craftsmanship necessitate the selection of the villages. Participant observation, in-depth interviews and Semi Structured Interview with a total of 39 informants (32 nuclear families of craft workers and 7) are employed during two months of fieldwork.

Participant observation was important to get in touch with the craft workers and thus to establish a good deal of rapport. The researcher had the opportunity to observe methods, means and process of crafts production and the day to day activities of craft workers. The researcher had also the chance to take part in communal gatherings, festivals, markets, drinking houses and tried to understand the actual relation between craft workers and non-craft workers and also among
craft workers themselves, the difference and similarity in celebrating feasts and exchange systems.

In fact, a great deal of information and/or data is collected via unstructured interview. Selected informants from both craft workers and non-craft workers; priests, farmers, merchants, government officials, of different socio-economic background, were interviewed intensively. In addition, semi-structured interview is used at the end of fieldwork, to cross check the reliability of the data already collected. To this end, guiding questions, which constitute issues that have been repeatedly mentioned and considered ambiguous like origin of craft workers, and degree of marginalization through time, are used.

Cultural Marginalization as a Factor and Form of Marginalization: The explanation that has been frequently mentioned by the non-craft workers as factors for marginalization of craft workers are fairly related with what Pankhurst (2001:8) categorized as ‘cultural marginalization’ which is expressed in such generalized attributes: “negative stereotyping, polluting work and mythological justifications”.

Myths about the Origin of Craft Workers: The mythological assumptions concerning origin of craft workers retained either to rationalize as craft workers’ origin is unnatural (as different from human beings) or to claim them as cursed creatures due to their evil deeds. The first mythological explanation tends to claim that craft workers’, excluding tanners, discovered not created. This myth explains craft workers were come out from the soil while a farmer ploughs, unlike the majority who believed to be created on the image of God. The myth depicts farming as ‘noble occupation’ and farmers as chosen agents. Since the myth asserts as craft workers are ‘created’ unnaturally, craft working is more likely considered as dishonoured occupation. However, social position is not exactly related with the occupation. This is because, as Karsten (1972:134) once stated, “families who abandoned handicraft working long ago might still be considered socially inferior while ordinary people can take up the occupation without affecting their social status”.

The second myth is associated with evil eye nature of craft workers. Unlike the first, the following myth implicitly prizes similar origin as craft workers are created in the image of God. As explained by Non-craft worker informants

The buda nature of craft workers is due to Eve’s lay to God; Eve had thirty children until the day God come to her and asked to show him all. She showed him fifteen of them hiding the rest fifteen. As he knew she lied to him, God was believed to have said to her “Good! Let all you hide remain hidden from you”. Then, the fifteen became invisible to her and human beings in general. It was believed then all the fifteen cursed children of Eve had became various sorts of the evil spirits of which the buda people belonged to mystical power related to the evil eye.

Likewise, the next myth portrayed equal status in origin while claiming failure from higher status due to evil deeds. A church educated teacher informant explained the myth as:

There were anti-Christian groups in Israel called Endorawian. Initially, these people were blessed with the skill of art, Tibe. But latter they began to use it against human beings in general and Christians who had lived around them in particular. Thus, these people came to be well known in their secret evil power. This power was known only among Endorawiyans and was transferred genealogically. They were capable of
reincarnating the deceased. Their power of reincarnation was secret, not seen and acquired by anyone out of their genealogy. In addition, they discovered producing materials from soil, solid iron and cotton fiber by using their evil power. Later, God gave power to Christians to control these evil possessed people.

The myth has been employed to put the craft workers at a distance by associating them with non-Christian groups who have been attributed with and known by secret and magical deeds.

It also implicitly assumes that the art of making objects from soil, solid iron and cotton fibers need to have secret power. This seems ascertain what Simoons (1960: 180) claimed to be the source of smiths' marginalization in Northwest Ethiopia: "the ability of the workers [smiths] to change the shape of metal which is believed to result from magical forces which in turn can be offset by the use of certain charms i.e. as dangerous transformation. Such association craft working with superstitious beliefs may come to 'involve some degree of fear and awe or some belief that the powers of these groups are combined with unclean and/or spiritually degrading qualities’" (Haberland 1979:129). In addition, the myth depicts as status is liable to power relation. Endorawian were said to have been conquered and accept Christianity forcefully. As a result, they have to be kept under control of the conqueror and hence, predisposed to provide and fulfil the needs of their masters.

In similar nuance with the above two consecutive myths, the following one tends to associate dishonour of craft working with deeds of 'anti-Christian' man called Kayla.

An elder explained the myth as:

There was a man in Israel called Kayla. It was called so, because Kayla had burnt churches and massacred Christians. In due course of time, Kayla and his followers came under the control of Christians and subjected to serve them. However, Kayla and his followers had frequently revolted even after submission. Being offensive, the kings and masters come to be very serious; it was gradually that these rebellious groups were baptized by their masters. Hence the occupation they engaged considered disgraceful and dishonoured.

In addition to stereotyping and devaluing connotation, the myths indicate the type of relation between the dominated and dominant which has expressed in an "asymmetric upward flow of difference characterized by mistrust, suspicion, and malicious rivalry" (Hoben, 1970:95). Another mythportrays craft workers ‘have facilitated both his arrest and Crucification by providing the tongs to pull him out of a crevice and finally the nail to crucify him with’” (Damtew, 2000:95). This explanation has employed to depict the alleged ‘anti-Christ role’.

In general, the above myths tend to portray craft workers either as cursed creatures due to their evil deeds though created in a way human beings created or as originated unnaturally. Implicitly, the myths portray craft workers as migrants or as they are not 'original' inhabitants of where they are now. Furthermore, the myths signify the type of relation, the dominant and the dominated, which had to be maintained on the basis of offensive or destructive character of craft workers.

**Negative Characterizations and Assumptions:** Non-craft workers attributed different negative characterizations and normative assumptions to claim marginalization of craft workers. Predominantly, craft workers of DembechaWoreda are associated with poor life style and danger. They have been characterized negatively as untrustworthy, unreliable (partly stemmed from the myths which depicts them as deniers of Christ), wasteful, extravagant consumer, having no settled abode, lazy and anti-social.

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Craft workers are thought as having no settled abode, moving from place to place as they feel inclined. There is a saying “shemanie agrena rest yelewm” (lit. any craft worker has no country and). This seems an endeavour to verify as craft workers were denied to own land due to their itinerant character. Though it needs further ethno-historical study, it seems possible to argue that craft workers would not be itinerant if they had the right to land.

Moreover, craft workers are considered as 'anti-social', as they act and perform in contrary to the norms and values of the 'host' society. Tanners, for example, blamed of rapacious eating habit. According to some non-craft workers, “tanners in the past did not care about what part to be eaten and who slaughtered the animal as long as it is meat”. They are also considered as 'anti-religion' on the basis that do not respect holidays commemorate in the names of Saints and Angels and also are considered not to fast. They are also suspected not able to holdback secrets since they are cursed beings. According to some of non-craft workers, it was partly due to this fact that craft workers were kept aside from power and religious performances.

In summary, the above characterizations are often malicious gossips applied to devalue craft workers while consolidating others authority. Some of the characterizations and assumptions are apparent among the Chewa (free born, not descend from low status groups) themselves, but their applicability with stereotyping value has never committed to memory. On this ground, it is possible to suspect that the negative characterizations are deductions recited to defame the craft workers. Craft workers also disclosed that the negative characterizations are calculated detractions to rationalize exclusion or restriction from participation and involvement in socio-cultural and political affairs. More importantly, the negative characterizations of craft workers are maintained based upon the value of the non-craft workers, serve to reinforce their sense of superior rectitude (Hallpike, 1968).

**Associating Craft Workers with Evil Eye:** Craft workers, including tanners, are often suspected of, and are associated with, being *buda*, having the evil spirit that could attack other people to cause illness and death. The word *buda* in Dembecha signifies “both the spirit which possess a person and the person capable of causing the spirit possession” (Quirin, 1974:239). *Buda* people are believed to eat flesh and sip blood of living things. The non-craft workers reported that the corpse of a person who died off evil eye attack is usually taken out of the grave. It is widely believed that they ride hyena on the way to and back from the grave of the deceased and thought to conceal their human identity while digging the grave. As a result, they are stereotyped and/or insulted as *jibgalabi* (hyena rider). Hyena is a negatively perceived animal and its name is often employed to refer negative traits of a person. The *jib* (hyena) is, thus, stereotyped to connote being a voracious eater, not to be selective in eating and act opposite to human beings or as someone like to move at night as evil scavenger.

Marginalization is more severe and intense towards people with evil spirit. This is mainly because the evil spirit is believed to be inherited or transmitted from parents to children. For example, though intermarriage with craft workers is considered illegitimate, there is a difference in preferences during marriage arrangement between craft workers suspected of the spirit and those engaged in the occupation but not associated with *buda*; the second group is more likely to be partners of non-craft workers than the first one.

Evil eye attack is thought to be practiced by sly gaze. Though eye gaze is believed to be essential, every eye contact with the *buda* does not mean an attack. Instances like fear, anxiety and worry at times of eye gaze or contact with the *buda* people are believed to increase
vulnerability. In addition, playing or acting freely/extrovertly is believed to attract the attention of an envious *buda*. That is to say, when one expresses his/her emotions too freely and becomes too outgoing with others, he places himself in a position of vulnerability to the evil eye. As a result, people usually do not feel free and “presents a façade of stolidity and silence” (Reminick, 1978), at times when people suspect the presence of these people. Moreover, periods associated with fecundity and multiplication are considered too dangerous. In any case, attack of *budais* believed to result in wasting sickness, domestic accidents, infertility, bad luck, sick livestock, blighted crops and death. Therefore, craft workers involvement in associations like in joint labour usually creates disdain.

Though evil eye attack is said to be cured through exorcism, prevention is believed to be better. As a precaution method, frequent contact and intimacy are advised to be avoided. This belief thus perpetuates spatial segregation which in turn said to have reinforced other aspects of marginalization. In addition, the notion of *buda* affects personal relation. For instance, families whose member is attacked by a *buda* would not have good relation with the person suspected of the attack. Even sometimes, if a *buda* is known during exorcism, he/she will be in quarrel with the attacked family. In addition, the fear of evil eye attack has been an ideological force for craft workers marginalization through physical distance which further perpetuates social distance and exclusion. In other words, due to the perception as *buda* is inheritable, and as intimacy/physical contact would hasten evil eye attack, social interaction has been restricted in terms of intermarriage, friendship and neighbourhood ties, and residential integration.

**Manifestations of Socio-Economic Marginalization**

**Restriction in Social Associations:** There are different social associations established voluntarily on the basis of kinship tie, vicinage, religion, and friendship tie and utilized on a reciprocal basis to accomplish different venture or goals. This includes *idir* (burial association), *mahiber* (religious feast association), *iqub* (rotating credit association), *shiha*; (group cattle keeping), etc. Though ideally the associations are said to be voluntary, there are practical rules and principles, devised based on socio-cultural norms, which govern roles, relations, actions, responsibilities and membership.

In the past association organized among non-craft workers were highly discriminatory to craft workers. As a result, craft workers were forced to establish their own separate associations. Nowadays, however, strongest restrictive ‘informal’ rules and discouraging practices seem to soothe, even to be abandoned. The changes can be exemplified by AtoMolla’s life experience of burial places. He said,

> *We were not allowed to be buried in the same graveyard with the rest of the society. Far from the church, at the left side, was where burial of our people used to be conducted. Nowadays, that is not the case. Everyone shares the same cemetery. It is likely that I am not pushed like my father.*

Now it is common for a craft worker and a farmer to sit next to each other in communal gatherings. However, it is not to say that all is well. Though many of the strongest forms of discrimination seem to soothe, even to be abandoned, craft worker in Dembechaworeda are still reminded very often that they are different from and unequal with the rest. The experience which shows change in its degree and form seems similar in different associations.
In the past, the involvement of craft workers in an idir had been limited by its membership principle and settlement proximity. Craft workers at these villages were obliged to have their own association. People claimed that it was due to the settlement pattern that craft workers and farmers had different idir. But it should be noted that geographical distancing was an extension of the segregation. Hence, exclusion from idir membership was implicitly forced phenomenon. Since the Derge regime, however, changes have seen.

The second traditional association that had been restrictive to craft workers to be members is iqub, a form of saving association in which weekly or monthly payments of a fixed sum is exchanged for the privilege of receiving a large lump sum at some point in the life of the group (Levin:2000). Iqub in DembechaWoreda is organized among members who are known each other very well on the basis of economic standard. The fieldwork revealed that economic alienation has affected membership of craft workers in social associations. Since craft workers were economically disadvantageous groups, they would not fit with non-craft workers' payment standard.

In addition to the unproportional income, negative characterizations of craft workers as they are unreliable, untrustworthy and itinerant had played discouraging role. Explicitly, nowadays, in most iqubs the only requirement one needs to have in order to be a member in an iqub is financial capacity. Relatively speaking, iqub is more democratic and inclusive of all social associations. Anyone can be a member as long as he/she can afford the required payment and is liable to the rules.

The third one, mahiber, is the most predominant religious oriented association. It is associations in which people in good relation gather once a month to chat, eat and drink. All members have the opportunity to prepare the feast turn by turn. As Levin (2000: 224) stated “the chief purpose of mahiber is to eat and drink in honor of a certain Saint on His day every month”. The members also help each other in different occasions. In the past craft workers were not accepted as members of this association. But they were invited to a household in whose house the monthly feast took place even though they were not given equal attention and privilege.

During the feast sitting and eating were not merely placing oneself and partaking food respectively. Eating together being sitting down side by side has been considered a manifestation of equality. Therefore, to sit commensality was restrictive, as artisans were not allowed sit wherever they want. Especially, for tanners commensality still seems uncommon. In addition, invitation relation at such instances has not been reciprocal; acceptance craft workers’ invitation was equivocal. Furthermore, craft workers, except tanners, of Dembechaworeda were considered as not good for fertility. As a result they were not encouraged to join mahiber of non-craft workers because the association asserts joint labour in agricultural activities among members.

As a result, handicraft workers had been forced to organize their own mahiber with similar chief purpose, to eat and drink in honour of a certain Saint. In due course of time, however, certain changes come to be seen; few farmer craft workers began to be included in the wider mahibers of

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3 Tanners are still facing difficulties about being a full member in such feast oriented associations due to the perception that connects tanners with dirt.
non-craft workers. Nowadays, craft workers can join different mahibers if they are economically fit, capacity to offer foods and drinks in their turn. The only difficulty seems to lie in mahibers organized by elders because acceptance among ex-members is mandatory. According to craft worker informants, some elders are still inconvenient and do not feel comfortable on the presence of craft workers in communal gatherings let alone in a mahiber which is associated with both secular and spiritual life matters.

In general, involvement of craft workers in different social associations is showing improvement. Pre-existing restrictive rules which were devised on the basis of fertile pollutant and impurity are now becoming things of the past despite the stagnated perception of some elders. Another thing worth mentioning is though inclusion is improving, equal involvement in affairs and treatment with in an association is still doubtful.

Marriage Restriction: Marriage constitutes socio-economic conditions and events which could determine one's life and his family's and the community at large. Thus, it is a collective responsibility and function. Getting married for an individual means a shift or a beginning to shift to another socio-economic realm.

In Dembechaworeda, marriage arrangement practice, circumscribed by parental guidance and approval, is highly bounded with elaborated rules, regulations and procedures. Selection of a marriage partner is usually guided by rules that ensure the perpetuation of kinship ties and socio-economic status. As Levin (2000:116) described, the Amhara marriage rule of kinship tie is critical variable which "stipulates that marriage partners must not be closer than "seven houses", that is spouses, must not have a common great-great-great grandparent". In relation to socio-economic condition, different issues like family background (like descent, wealth, and absence of hereditary disease) and trait character are considerable prerequisites. On basis such regulations, marriage with craft workers is considered disgraceful. The non-craft workers community considers intermarriage with craft workers as 'pollutant'. This is because the categorization as chewa (commoner) and ejeseri (handicraft worker) was maintained in the hierarchically regulated social relation where stratification was based on the concept of niluhzer (pure descent) or atentam (full bone). Handicraft workers are perceived to have impure descent and are referred to as atintegodelo (impartial boned) which said to have degrade even bring to an end the quality of the so-called 'pure' descents. Thus, the chewas believed that one's descent status would persist or improve as long as intermarriage with low status groups including craft workers is abstained.

The dominant society mentioned a number of attributes that make handicraft workers poor marriage prospects. Of all, the most frequently mentioned was the low status of handicraft workers. Informants most often mentioned "anasanachew" (they are 'minorities') when they were asked why intermarriage with craft workers is restricted and viewed as disgraceful. According to some non-craft workers' view, the restriction of intermarriage was due to handicraft workers' evil nature and anti-social and human deeds that are maintained through myths and negative characterizations, as already described.

Whatsoever the ideological explanations, craft workers' in-group marriage arrangement practice arises from chewas' avoidance; intramarriage arises not because of craft workers' interest to keep themselves apart from the dominant society. The apparent interest of the chewa in Dembecha Woreda is, for the most part, to avoid societal negligence because social respect or prestige is believed to be maintained by preserving the social status inherited from parents.
Apart from becoming biological segregation, exclusion in intermarriage perpetuates other forms of marginalization. For example, since married couples are expected to establish new nuclear family on land given by parents, spatial segregation have maintained partly through prescribed intermarriage arrangement. Spatial marginalization further enhances social distance by discouraging physical contact between craft workers and non-craft workers. In general in the past, craft workers and non-craft worker were not auspicious marriage partners.

Moreover, craft workers are disadvantageous in marriage arrangement. For example, finding an eligible marriage partner in the nearby village(s) has often been difficult. Besides the limited number of craft workers who live in a village, kinship tie and religion narrow the scope of getting legitimate marriage partner. The children of craft workers have been forced to migrate out of their birth place partly to find a potential marriage mate. The migration of craft workers' children has also been hastened by negative societal perception and insults of being unmarried at what is accepted as “appropriate age”. Even, if it is now changing, children in rural villages have ordinarily got married before puberty. If a person did not get married up to the age of puberty, he/she is considered as socially unwanted and suspected of some problems. He/she is also referred to moral degrading words like *kumokere* (lit. stay standing). This social negligence is not only a problem to the unmarried individual but also brings social obloquy or infamy to the family.

Nowadays, however, though intermarriage with craft workers is not approved officially, liability to customary principles of marriage become nominal among youngsters i.e. youngsters began to cross the boundary. This currently emerged cross marriage said to be dominated by hypergamous type. That is to mean, comparatively more adolescent males from the highest status, from the *chewa* group, take wives from the lowest status than the reverse. This is partly due to character of status inheritance. If a man from *chewa* group marries a women from craft worker groups, status of their family including the wife and children is more likely to attain the husband’s status than the reverse. In Dembecha, emphasis is mainly given to the patrilineal side of once descent. Though status of someone is highly influenced by and reckoned through the patrilineal line, matrilineal line has also undisputable role in determining once position in the ladder of the hierarchy. In the past, marriagability of a person should be attested from both lines; ‘defect’ in one side proves unmarriagability according to the *chewas* view. In fact, there are instances when half-craft worker parented individuals are more advantageous than individuals born from two craft worker parents. In conclusion, in-group marriage of craft workersin DembechaWoredais an imposed life situations and salient variable in perpetuating low status of craft workers.

**Religious Discrimination:** Craft workers in DembechaWoreda have experienced de facto discrimination in religious practices which have mainly manifested in prohibition from priesthood; craft workers are not allowed to be priests. The exclusion has no religious basis: as there is no any teaching that evokes partiality and inequality of believers in Ethiopian Orthodox church. There are, however, different socio-cultural attributes retained as a rationale for the exclusion craft workers from being a priest. For instance, evil eye has been often mentioned and associated with weavers’ exclusion. But the association of the negative characterizations and priesthood prohibition tends to be arguable. For example, tanners who are not associated with evil eye have similar experience with questionable explanation. Elders have disclosed that tanners have been restricted from priesthood due to their contamination with the hide they are working on. But a tanner who abandoned tanning long ago is not allowed to be a
priest. Therefore, the negative characterizations and attributes are prejudices and arguable discriminatory explanations retained to secure status oriented benefits.

Moreover, exclusion from priesthood has perpetuated and widened marginalization. Prohibition from priesthood means restriction from attending church school, which had been the only way to get educated. Thus, craft workers were forced to remain illiterate for decades even for centuries. As a result, 'religiously sanctioned' exclusion was also mean denial of access to education. In addition, prohibition from being priesthood restricts to take part in some feasts held at the church compound. This further perpetuates weak social interaction.

**Economic Alienation:** In Dembecha Woreda, mainly until 1975 G.C, the right to strategic resources was ascribed; inherited through consanguineal links. Thus craft workers had said to be from aristocratic descent, they were positioned at the lower position, where land ownership is restricted, of social structure. As a result, children of craft workers were left to acquire what their parents and forefathers used to practice, handicraft working. In addition to the principles and rules of feudalism, prohibition from economic rights was reinforced in negative characterizations and mythological explanations. The following explanation was exploited to rationalize the cause of restriction to ownership of land and property.

*In the distant past there was no boundary to farm and settlement since the number of people was limited. In due course of time, however, the number of people increased and competition for good land and settlement began to cause conflict among people. A popular king of that time arranged communal gathering to determine/demarcate boundary of the land needed to farm and settle. Almost all the people who were under his rule were available on time at the appointment place. But the craft workers and the Muslims arrived late, after boundary was laid and the right to ownership was granted. Craft workers were late while crafting and the Muslims were late while drinking coffee. The king had passed an order as craft workers should make their living by their skills.*

Furthermore, the researcher was informed that this myth had been widely spoken among district governors during the feudal regime to portray as prohibition to land ownership was not a phenomenon emerged during the era of Emperor Haile Sellassie. The explanation was to claim as everything happened due to the fault, laziness and unconsciousness of craft workers' forefathers about the importance of land. But this assumption seems to contradict with the people's perception of craft workers as *tebib* (wise). Practically, as to craft workers, the above explanations are to secure the interest and advantage of non-craft workers. They reported that the myths and such forms of exclusion were for the sake of authorized groups to suit their rule. Even some claimed that the prohibitions to resource and property were king's 'regulatory controlling mechanisms' to exploit them. Moreover, exclusion on the basis of such arguable controlling mechanisms might be due to their consciousness about the inevitability of craft workers, in the absence of substituting technologies and techniques, to the well functioning of other segments of

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*In the past, not only from church education, craft worker's children were also despised/discouraged in modern schools. Nowadays, however, children's of craft workers and non-craft workers are attending modern education sitting on the same chair.*

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the economy. Here, it is necessary to remind that the Amhara structured social relation is depending on the existence of "legitimate regulatory control". In the region, it was assumed that "people must be contained by the surveillance and regulation of an authoritative figure with whom the person has a diffuse and personal relationship of dependence" (Hoben, 1970:195). Thus, alienation of craft workers from economic benefits was partly to keep them loyal to their occupation and rulers.

The alienation to resources and property has also been rationalized with negative characterizations and ideological explanations. As it has been already stated the dominant, non-craft workers, explained that craft workers could endanger fertility since they are thought to be cursed beings. Accordingly, agricultural land ploughed by craft workers would not productive as to its potential. Even non-craft worker informants disclosed that "places where a craft worker's foot rests on during sawing would not grow crops. If it is fortunate enough to grow, the seedling reveals in yellow colour and thin feature". In relation to this, when the plantation of ordinary farmers becomes yellow, people commonly say 'yashemanieazimerayimeselal' (it looks like weavers' plantation). The dimension of economic marginalization in association with danger is also evident in livestock ownership. Craft workers, excluding tanners, have not been supposed to possess livestock. Because they are said to threaten the breeding potential of livestock since they possess evil spirits.

The alienation from land and livestock ownership seems to have caused a patron-client type of group relation. The patron-client economic relation of craft workers with the dominant society was embedded with a set of unproportional reciprocal obligations defined in the context of status difference. Craft workers in Dembecha were provided with 'benefits' like subsistence and sometimes security on the condition that they provide craft services to the client.

However, since 1975 craft workers became land owners. As a result, they have shifted to subsistence producers. Being subsistence producers craft production has come to be carried to earn cash unlike in the past. That is to say, craft worker farmers turn their face to craft working when cash is needed. Hence, the occupation is more likely to be part-time engagement.

3. SUMMARY AND CONCLUSIONS

The major question of this paper was to answer the question why and how are craft workers marginalized while their products have been basic utilities of the community in Dembechaworeda. The factors that are accounted for the low status of craft workers are mainly cultural constructions retained in mythological justification, negative characterization, and in evil eye ideology. The myths are asserted to rationalize the different origin and identity of craft workers. The myths predominantly portray the craft workers as created unnaturally and descended from cursed siblings. However, as Alula Pankhurst (2001) observed in southern Ethiopia, the myths upheld among the people of Dembechaworeda lack explicit elaborate justification and hence, are more of allegations. In addition, craft workers are stereotyped in negative characterizations and assumptions. They are characterized as having poor life style and hence, portrayed as being anti-social, unreliable, wasteful, lazy, drunkards etc. Moreover, craft workers particularly weavers, blacksmiths and potters are said to have been possessed by inherited evil spirit that treats life and endangers productivity.

Therefore, craft workers of the study area are socially excluded, culturally subordinated, spatially segregated, economically disadvantaged and politically disempowered. In fact, there is a difference in the degree and forms of marginalization among craft workers. Tanners are the most
despised followed by potters. But the position of weavers and blacksmiths is doubtful. In the past, marginalization was expressed in strict endogamy rules, restriction on joining associations, separate seating during feasts and ceremonies, separate residential units, restriction on land right and sometimes also in ownership of livestock and prohibition from religious affairs.

However, many dimensions of marginalization are now declining. There is no official marginalization. The change is evidenced in increase in degree of craft workers participation in various communal associations and social activities, frequent contact and mixing in burial, credit association and sharing the same table with non-craft workers. Particularly, economic alienation is now becoming faded memory of elders. Thus, the socio-economic position of craft workers has improved. The change in the system of land ownership from ascription to achievement and access to education played significant role. Approbation of land right has played immense role in changing social trends and relation of craft workers with the host community. Abolition of hereditary land ownership right has paved the way for craft worker to extricate the negative attitude and belief that are upheld among the host community. For instance, craft workers were said to have malign power that could endanger fertility and were considered as cursed beings not to farm and rear livestock. However, after the 1975 land reform many craft workers become successful in farm. In addition to economic significance the success entitled the craft workers with social acceptance.

Moreover, the right to land ownership transforms craft workers to be subsistence producers. Being subsistence producers, craft workers are no longer considered as ‘parasites’ which in turn facilitate integration with the dominant society. In addition, subsistence production changed the type of relation from patron-client to dyadic or to interpersonal. When land ownership was hereditary, economic relation of craft workers with non-craft workers was characterized by mistrust, suspicion and unequal distribution of profits. During those times, relation was conditioned by the interest of the dominant society. Nowadays, however, relation is maintained and expressed through ‘market’. The land right also facilitates occupational transformation. Many craft workers have abandoned craft working by being full time farmers. This signifies transformation from a precarious and despised occupation to dependable and valued agriculture. This further induced changes in relation to their socio-spatial relation. In addition, exposure to education has played integrating role by changing the attitude of the society. However, they are not considered as full social persons. They are still despised at least through contemptuous feelings and ideological explanations.

REFERENCES


Youth Involvement in Policy Decision-Making Processes: Analysis of Good Governance versus Policy Performance in the City of Bahir Dar

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Abstract

Ethiopia has a demographic profile dominated by a young population; particularly from 15-29 years are huge but generally involving less in policy formulation, decision-making and implementation processes. The researcher also supposes youth have limited social networks that can enhance their strength in the socio-political affairs of the city. This paper presented in terms of policy and plan of action by developing indicators. The main objective of the study was to understand the involvement of youth in policy decision-making processes in terms of good governance and policy packages in the City Administration of Bahir Dar. The study focused on perspectives of youth and the practices on the ground. The study relied on more of qualitative methodological approaches which exhaustively look through from policy dimension. Both primary and secondary sources were used. The primary data was generated through in-depth interviews and focus group discussions. Secondary documents were collected through reviewing of documents. Qualitative method of analysis was employed by developing conceptualizations and preposition of explanation. The units of analysis in this study were groups and that of data collection were individuals which assumed to be experts or knowledgeable. They were purposefully assigned; but institutional ethical clearance and informed verbal consent were obtained before undertaking the study. This study has found social and cultural influences, lack of coordination of actors and the youth, shortage of financial provision and skilled human power, loose controlling and monitoring systems were problems in their involvement in political decision-making processes. They lack information and systems of report were also problems. However, only those associations that is akin to the government to some extent, involved. Based on the findings of the study, conclusion and recommendations were made.

1. INTRODUCTION

Most researches explain that youth make up almost one fifth of the world’s population. Among this youth between the age of 15 and 24 are around 1.061 billion and constitutes 18% of world population, out of which 85% live in developing nations (Shimelis, 2006). However, the FDRE National Youth Policy (2004) argues that the age ranges can be given from different directions and situational contexts on the basis of objective conditions existing in the country. In Ethiopia to mobilize and employ the potential capacities and competence of youth for the building of democratic system and development purpose the youth policy defines the age range between 15-29 years. Taking in to account of these realities and the socio-economic status youth as manifestation of the researcher also advocates this age range as the best category in this study. Although, the youth are seen as the leading groups of positive social changes in nations around the world however, they are seen as constituting a class without power which is exclusive of socio-economic, political and cultural affairs and are being marginalized and underrepresented in many developing countries (Chana, 2007).

Youth participation is a process through which the youth are able to solve problems and carry out plans that provide tangible benefits and increase their involvement in several community policy issues (Koller and Daniel, 2010). These scholars also believed that the areas of entertaining
youth participation in decision-making processes and help to reform the existing bureaucratic complexes are enhancing the capability of designing sustained development policies and implementing for sustainable change in the community. The study focuses on the extent of youth involvement in policy designing and implementation processes and the socio-economic and political networking systems, processes and institutionalization of their participation in the city of Bahir Dar.

Significant majority of the Ethiopian population is considered under youth category. This group of population is potentially progressive, innovative and economically active if they get appropriate system, processes of involvement and sustainable institutions that have capacity to absorb their innovation. This enhances an informed participation and builds an informed community groups in the country. This research therefore investigates youth participation, informed and institutionally sustainable involvement, in socio-economical and political policy formulation processes and enhancing policy performances in the city of Bahir Dar.

The youth are seen as the leading groups of positive social changes in nations around the world. This is the result of youth involvement (as groups of citizens) in the societal development. The youths are assets; constitute assets to development, and these development assets are expedited when the youths are empowered to be active citizens of the nation (Chana, 2007). Although, youth are increasingly emerging as a special social group in a country’s development however the socio-economic, cultural and political ground that encourage youth participation has faced risks and uncertainties in many developing countries including Ethiopia. For instance in Ethiopia youth participation is shaped by the political history (politikanacorrentinberuku) it means ‘May away from politics and electric, cultural beliefs (lijyirotalenjiabatunaykedmim) meaning ‘even a boy may run but not ahead of his father, socio-economy (mostly dependents) and conducive public space (lack of the system, processual and institutional space). These proverbs have a great impact on youth psychological and moral developments which limits their participation.

Said (2000) notes that, in reality the processes of participation are rarely achieved because of the following factors: 1) capacity of the rulers of the nation to manage the participation processes successfully, 2) the flexibility of the civil society and the nature of the international political economy in positively promoting and supporting the processes. The researcher also hypothesize that the issues raised by Said (2000) are essential points in terms of participation of the youth in policy formulation processes and the performance of policies during implementation. In Ethiopia, the facets can be explained in many ways. 1) Youth participation becomes an issue of discourse - the institutions in place and the reality of youth participation as well as the resources allocated for the processes in the field do not commit. 2) Youth participation is an issue of official “narrative”- that together with the infrastructure put in place and the poor means allocated makes it problematic during policy formulation process as well as implementation, monitoring and evaluation. 3) In combination with a lack of commitment from the authorities to efficiently share power with civil society and the processes of engaging them in their needs and interests are also notable problems.

Research results show youth participation in many aspects of the society. Chalachew (2009) presents the underlying causes of social problems such as poverty and youth attributions for improvement of livelihoods of families and communities. The study was delimited to youths from university and secondary school student groups. Berhanu (2005) describes and analyzes the nature and causes of Ethiopian youth unemployment and underemployment rate. He stresses on
policies to improve the employment position of the youth population to promote economic growth. Hibret (2007) also explained that Ethiopia is among the least-developed countries with multi-faceted reproductive health problems, especially among the youth and the factors that predispose out-of-school. Similarly, Shimelis (2006) noted that Youth have remained mostly excluded from society’s important and critical socio-economic decisions. He discusses the barriers to youth participation and the possible ways of overcoming the problems.

In this respect, previous researches emphasized only on particular aspects of youth participation and unable to bring concrete evidence related to youth participation on policies and performances on the ground. However, this study particularly focuses on processes of policy design and the frameworks of youth participation and performance outcomes of such policies in the eyes of the youth in Bahir Dar city administration. There were attempts in the city to participate the youth but the performance of such attempt requires further policy analysis in terms of outcomes. The analysis of what gap exists within the local context is also essential to plan and implement with improved performance and outcome in the city. The study is, thus, assumed to fill the knowledge gaps as well as the issues in policy prioritization processes and performance outcomes of youth participation in Bahir Dar City Administration.

Therefore, the researcher selected the study area purposefully, for two reasons. One is the researcher’s familiarity in observing the research issues in the city for long time. Second, as part of city reform programs in Ethiopia, Bahir Dar is a reform city and is attempting to involve the youth in various programs and policies.

This study was aimed at assessing the involvement of the youth:
- In youth participation in decision-making processes
- in policy decision-making processes in an established framework;
- In implementing, monitoring and evaluating performance per the established frameworks;
- challenges for involving the youth in decision-making processes in the city; and

Conceptual Framework: A conceptual framework shows the path based on the experiences of others and the assumptions on which we base ourselves to investigate the research problem. Conceptual framework focuses on key concepts, their definitions, the indicators and measurements in the study. The key concepts in this study are good governance, youth participation, policy decision-making processes, civil society organizations and their structural as well as process linkages. The links between definitions, indicators or measurements are established to frame the paths of analysis of the data results and discuss the findings.

The researcher attempted to analyze the current government policy of youth participation in decision-making processes based on the above concepts. Lauritzen (2001) asserts that without formulating standards of measurement, evaluation type of analysis could not be practical. Government officials may determine the participation of youth in decision-making process and policy formulations, when the system of governance is unjust. To mitigate this governance challenges, youth organization can play a great role in involving youth, making them active citizens and participatory in policy decision process in their own lives. Economic Commission for Africa (ECA) verified that the decision-making power of youth can impact on policies and practices in ways that enhance the quality of life for youth, to their society and to their country. In broad sense it is a means of enhancing good governance (ECA, 2005).
Indicators and Measurements of Youth Participation: The study established indicators from review of literature via modification to the context and considered measures that were important for data collection. The first indicator was the existence of established inclusive framework for youth participation in the city's institutions selected for this study (governmental, non-governmental and youth groups). The existence of inclusive framework and the adherence to the principles in the framework were qualitatively assessed. This was proved when government, nongovernment and youth groups and individuals work on an established framework of participation.

The second indicator was the existence of transparent organizational structures. This was assumed to measure the openness of available information in the frameworks of participation to all citizens without discrimination and the youth as part of the society in particular. This also used to measure youth participation as to how their aspirations as future holders of the city affairs were clearly included in policy formulation and implementation. Transparent government structures empowers youth as policy formulators, implementers and evaluators in the city.

The third indicator was government predictability. The measurement of this indicator was to evaluate the extent of the provision of conducive and enabling environment for youth participation. This was also assumed to measure the commitment of leaders and youth themselves in participation and incorporating their priorities in the city plans of action. It was also seen as essential in creating enabling frameworks with the voices of the youth.

The fourth indicator was the performance outcomes and institutions and resources in place for the youth. This was seen through the provision and accessibility of youth specific socio-economic infrastructures and on which the youth have participated and prioritized. Because without the support of government and other organizations, adequate services, resources and commitment to the implementation of youth participation agenda can be unexpected in various policy decision-making processes and practices. Therefore, principles of youth participation in policy decision-making processes should be developed (Braeken et.al 2004). Thus study has used these indicators and measurements to prove the current youth participation in policy decision-making processes and performance in the city of Bahir Dar.
Figure 1: Word Diagram of the Principles of Youth Participation

- Mutual trust and respect
- Safe supportive and comfortable environment
- Appreciation of young people's knowledge and skills
- A shared vision of youth participation and what it means
- A work ethic which addresses non-discrimination and equity
- Authentic organizational behavior-practice what you preach
- Transparent and clear organizational structures
- A high regard for sensitivity
- Informed consent
- Protect young people
- Enjoyment not frustration and misuse
- Educational and development for their professional life
- Build positive relationship both inside and outside the organization
- Shared understanding that adults are not the enemy and that young people are assets
- Diversity-ensure the participation of young people from a wide range of social economic and political backgrounds

Source: Breaken et.al. (2004:17)

2. RESEARCH METHODOLOGY

Descriptive and explanatory approaches were employed to understand this study. The explanatory approach develops the causal relationships among the factors that affect youth from participating in decision-making processes in the city administration. The qualitative research was employed to describe various aspects of the behaviors of youth and other socio-economic factors identified in the social sciences and humanities Creswell, (2003). This study employed mainly qualitative approach because of two reasons: 1) due to political and social stresses on youth through Ethiopian history, youth issues remained hidden and assumed this reason requires qualitative approach to access pertinent information 2) the issue of participation has both explicit and implicit aspects to go through; and adequate access to information. But this does not mean that the researcher rule out the importance of quantitative facts.

Sample Design and Selection: Cross-section data on young people aged between 15 and 29 was collected. This type of data is collected at one point in time from a sample population selected at that time and was seen as representative of the youth population between 15 – 29 years of age. This approach was chosen because of the objective of the study: 1) the objective was not to compare youth participation trends in time perspective and in various regimes. It was to see the context in the study year since the city administration has become independent in administration and the government has initiated reforms. 2) Youth policy document was developed with framework of implementation only after the 2004 national and stakeholder consultation. Since the sample population in qualitative research depends on the data sets needed to answer the research questions from which sufficient information was assumed to be found.

The type of sampling was purposive and this ensured diversity. The sample contained respondents that varied in age, gender, occupation, educational qualification, religion, political party affiliation and rural-urban background. In this respect, respondents from (1) Women, Children and Youth Affairs Office, Amhara Development Association and Youth Association Center (quasi-government and party affiliate space) (2) Regional Workers and Social Affairs
Bureau (government affiliate and policy deciding space) (3) Micro and Small Scale Institution/Office (Quasi-government economic related space)(4) Civil Societies (NGOs and CBOs) (public and third sector advocacy space) was considered to collect pertinent information.

**Data Collection Tools and Sources:** For this study both primary and secondary data sources were researched. The primary sources of data were obtained from respondents through interview, dialogue and focus group discussion. While secondary data sources were accessed through document review which comprised of books, legal documents, reports and records of governmental, non-governmental and community based organizations. Data collection guides were developed based on the indicators.

3. **Data Presentation and Analysis**

**Ethiopian Youth Policies & Institutions:** Until very recently, there was no specific youth policy that specifically addressed youth issues. Youth issues were never considered and were not handled by high profile government ministers and institutions in Ethiopia. During the military regime from 1974-91, a strong mass organization of youth was established. It was called the Revolutionary Ethiopian Youth Association (REYA). REYA had about 3.8 million members from more than 9 million youth in the country. The association runs several programs, including the provision of primary health information, assistance in the rebuilding of homes for old people and persons with impairments (Berhanu et al., 2005). However, it was seen as political wing of the military regime and the involvement was not voluntary. It hasn’t got institutionalized policy document.

**The 2004 Ethiopian National Youth Policy:** According to Ethiopian urban youth development package in Ethiopia, for the first time, policy was designed at national levels in 2004. It specifically dealt with youth issues. The policy recognizes the disproportionate representation of youth. The policy document underpinned that the youth is underrepresented in decision-making positions and were affected by rampant unemployment. The youth policy identified the problems associated with the socio-economic and political system of the last regime and its role in the aggravation of unemployment and socio-economic problem in the country. The city administration of Bahir Dar considered these problems and designed plans in terms of the existing realities and aimed to account youth issues to involve them in the socio-economic and political decision-making processes.

**Policy Framework for Youth Participation:** Participation is an aspect here. In fact the Ethiopian national youth policy was designed to solve economic problems (unemployment), social problems (health and education) and political problems (freedom of association and youth rights of involvement in decisions that affect their lives). But, one of the informants from FGD underlined that though policy was formulated on youth issues it has never solved their problems. The informant said, “The policy by itself seems strategically designed to pull the youth in the system of governing rule, not for youth benefits”.

Berhanu et al. (2005) advocate that training of youth was essential to allow their active participation in policy development agendas. It was one of the mechanisms to develop the knowledge of youth about policy issues and their understanding of the policy processes. Data from ANRS women, children and youth affairs bureau indicates that the involvement of youth in policy formulation process can enable them to incorporate their felt needs and create a sense of ownership and thus ensure support and contribution to the implementation of the policies. An informant from unemployed youth group says “of course it is possible to talk too much about
policy formulation and processes but in practice few has been seen implemented. For instance many youth in the city of Bahir Dar do not know how the policy was formulated.

One unemployed youngster told that the formulation of youth policy with only few political affiliated youth involvement cannot be enough to confirm participation in policy formulation and framework development and decision-making processes. Another informant from ANRS people’s representatives underscored that the youth policy framework indicates that the involvement of stakeholders and partners at national and regional level as well as the youth themselves are expected widely involved in the youth policy formulation process. An informant from youth league pronounced that in order to inculcate youth policy framework to youth and others, there has been given of awareness creation once a year.

One informant from youth affairs expert agreed upon the above fact but due to socio-cultural problems, lack of coordination and loose evaluation and monitoring systems in the city of Bahir Dar, the expected outcomes were not achieved. This was seen as the big question of the city of Bahir Dar however many youth do not involve in practice.

As it could be seen from the youth policy document, it seems very inclusive and policy implementation manual has been prepared in an efficient manner. One informant from unemployed FGD said that “we youth social groups really appreciate the inclusiveness of the policy and its importance which helps youth to participate in our issues”. But, still majority of youth population in the city of Bahir Dar is not benefited.

FGD with leadership positions in the city of Bahir Dar explained that in Ethiopia there was centralized government system and this structure has never allowed youth to participate or raise their problems as an issue of policy concern. But the current youth policy is designed to consider the social, economical, political and cultural situations of the youth. Shimelis (2006) describes that inclusive youth policy framework comprises involvement of the youth in social (in community activities), economic (work and labor), political (local, regional, national and international decision-making processes) and cultural (the arts, cultural values and expressions).

Two of the discussants also demonstrated that there was no problem in the youth policy framework, annual plans and strategies in the city of Bahir Dar and in the framework. However it is a matter of implementation to change into practice to solve youth problems. The informants also underlined that there are much good news we heard but nothing has been practiced. The informant phrases, “where that good opportunity gone and where would implemented the designed youth policy” was their question in related to youth development packages.

One of the informants from family guidance association notified that youth are not a homogenous group since they are from diverse backgrounds and hence have diverse needs. He also assumed it is crucial therefore that mainstream policies and programs across all different sectors effectively address youth needs. As can be seen from national youth policy document, youth policy and development package is comprehensively arranged considering the age limit of youth from 15-29 years who live in urban and rural areas. One informant from higher position in public office pronounced that the formulation of policies was made either from grassroots levels considering the situations of the youth and their actual backgrounds. The zero draft documents were prepared from available information gathered and disseminated from top positioned professionals down to the youth beneficiaries. He believed that youth policy implementation manual and other strategies are organized from the actual situations of youth socio-economic, political and cultural aspects.
Enabling Youth Participation in Policy Decision-Making Processes: The ANRS youth policy implementation and development manual describes empowering the youth involving the creation of enabling environment for the citizens, especially for the youth to participate in decision-making processes and other development activities of the nation. An informant in the office of youth federation of Bahir Dar argued that there is a need for clear purpose when working with youth. In reality, youth involvement in the above mentioned processes were insignificant in the city and only very few youth league members could participate in the processes. From this reality one can recognize that there is a framework designed to involve youth in different decision-making process but there was limited attempt in practice.

An informant from micro and small scale enterprise in the city of Bahir Dar explained that institutional processes and working cultures also strengthen the active participation of youth in any plan of action, but youth need technical support in management, capacity building and in service training to understand and how to work effectively with others. The urban youth development package (2004) in the city of Bahir Dar also recognizes many evidences in which youth have been affected by injustices of the past and had not used the opportunities to show their potential practically. In such situation it was difficult to oversimplify the capacity of youth in their sphere of influence on socio-economic and political decision-making processes.

One of the key informants at kebele level, said that after the formation of new institution called women, children and youth affairs office in national, regional and at kebele level, the institution has been creating conducive environment to marginalized particularly youth social groups. The informant also emphasizes that youth in the city of Bahir Dar are encouraged to organize but few have accessed to credit, skill training, leadership training, technical support and provision of finance, setting sport centers and so on to make them capable citizen of the country.

One informant from ANRS people representative council asserts the existence of encouraging environment that youth are participating at different government structures about their issues. The informant relates the process with a proverb “FERES YADERSAL ENJI AYWAGAM”. This literally means ‘May a horse helps somebody to arrive best but not fight on behalf’. The notion of this proverb is that if youth are aware of their great opportunities and able to change into practice, there is opportunity and enabling environment. In contrast to the above information, two of discussants from unemployed FGD explained that most of the youth in the city of Bahir Dar are not involved.

Local Government and Transparency: One informant along the way to lake Tana said “I think the local governors are evil of approaching youth and afraid of their involvement in politics, who knows may expected to lose their power by coming young groups”. An informant from Care Ethiopia discloses that transparency can help and stimulate the active engagement of private sectors and civic societies in public affairs. An informant from Fassilokebele claims that “youth need clear and short information and fast decisions from local administrators and other concerned bodies”. Likewise, one informant from Young Men Christian Association (YMCA) said local officials did not approach youth transparently as what they are expected to do, then youth became afraid of their acts and unable to participate at local levels.

As the researcher practically observed in the city of Bahir Dar shows that transparency is viewed from two dimensions. In the first inspection, youth are a bit authorized when they become convinced to create alternative choices in their life at local levels and conscious of the
implications of such choices. In the second view, local government transparency is disclosed on
the creation and sustenance of the enabling conditions and authentic representative bodies for
youth to act on their behalf. Informant from youth affairs office strongly underlined that the three
large social groups (youth, women and children) were merged in one ministry at national level
and its structures at local levels. In practice, this created problems to distinguish independent
issues of these groups and was also difficult to prepare report to the concerned bodies and
analyzed documents for future reference. Likewise appointee on this office is woman and out of
the age category at city administration and kebele levels. Because of this, the attention of the
office is inclined towards women issues and did not give attention towards youth affairs. This
reluctance undermined the role and contribution of youth; the trend developed the public attitude
that youth organizations and their leaders are propaganda messengers of the governing party and
are not committed for the youth and their needs in the city.

Youth Participation and Social Inclusion: As information obtained from one informant in
MSSE office said youth have limited social networks beyond their immediate family members.
Information obtained from three unemployed youngsters in the city of Bahir Dar emphasized that
the youth face difficulties, including lack of support, lack of participation in decision-making
processes, discontinuity in their actions and lack of coordinated and continuous communications
with concerned bodies. This makes the youth distant from social affairs and be exposed to
addictions and juvenile delinquencies or criminal behaviors in their society.

The informant who works in women, children and youth affairs office at Bahir Dar underlined
that collaboration and partnership culture of youth and adults was essential to create a strong
bond between their social interactions. The informant believed that youth are capable of
accomplishing tasks when they are given of a power from the community, government and other
private institutions. Information obtained from FGD with youth in leadership position expressed
that the social acceptance and interaction of the youth in the community of Bahir Dar has two
dimensions: organized and unorganized ones. Another informant clearly put his idea as
cooperative social activities and good work culture are determinant factors particularly for youth
to be democrat, transparent and accountable citizen for future development. He said in reality we
adults unable to exercise but fast to criticize youth considered them as poor for all activities.
This is observed in the city of Bahir Dar.

Youth Participation and Performance: A key informant from Amhara development
association (ADA) asserted that civic associations are doing well to support youth participation
in the city and cooperate with other government institutions. An informant from women, children
and youth office of Bahir Dar said that from the total youth population of the city of Bahir Dar,
only 13,220 youth are organized and engaged in different youth associations particularly under
micro and small scale enterprise institutions. About 39,840 youth remain unorganized and most
of them are unemployed and are not recognized by government institutions. This shows that only
some of youth are engaged in different job opportunities and youth associations in the city.

In reality many youth are assigned into government leadership positions from those who are
member of youth league rather than other civic youth associations. One of youth league
association member in the city of Bahir Dar in contrast assured that in the near past, before the field work for this study, three youth were selected from youth league association members and assigned in leadership positions at different city administration sectors. For instance chairman of the youth league was assigned as the city of Bahir Dar civil service office vice chairperson. Another member of youth league was also assigned as head office of city government communication affairs. Although the extent of youth participation in policy decision-making process and implementation in the city of Bahir Dar is not sufficient enough, the youth have good openings to involve in many social development issues concerning their lives. But another unemployed informant disclaims that this is only experiencing on political affiliated youth groups in the city administration.

Table 7: Youth participation in planning and implementation, 2010

<table>
<thead>
<tr>
<th>Program areas</th>
<th>Participants in plan</th>
<th>Participants in practice</th>
<th>In percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness Creating program</td>
<td>12,167</td>
<td>9,572</td>
<td>78.67%</td>
</tr>
<tr>
<td>Creating job opportunities</td>
<td>12,139</td>
<td>6,715</td>
<td>55.31%</td>
</tr>
<tr>
<td>Give Technical training</td>
<td>18,859</td>
<td>8,238</td>
<td>43.68%</td>
</tr>
<tr>
<td>Create Market opportunities</td>
<td>2,004</td>
<td>355</td>
<td>17.71%</td>
</tr>
<tr>
<td>Give life skill training</td>
<td>410</td>
<td>236</td>
<td>57.5%</td>
</tr>
<tr>
<td>Opening business plan</td>
<td>380</td>
<td>23</td>
<td>28.75%</td>
</tr>
<tr>
<td>Total</td>
<td>45,959</td>
<td>25,139</td>
<td>54.69%</td>
</tr>
</tbody>
</table>


The table above has shown the number of participants in different program areas. Almost half of the youth attended in the planned action. It was also possible to conclude that youth who were involving to take part in creating awareness, job opportunities and life skill trainings were better than who were engaging in practical activities such as creating market places, facilitating business centers and engaging in technical trainings. From this we can deduce that there are theoretical activities which do not changed in to actual implementation process.

Benefits of Youth Participation in Decision-Making Processes: An informant in the Bureau of Works and Social Affairs understood that youth participation at all stages of the development process of policy issues enable them to benefit from the outcomes of the development activities. A key informant from HIV/AIDS secretariat of city of Bahir Dar argued that youth are organized and provide many free community services in developing awareness's of the people concerning HIV/AIDS and reproductive health issues. Another informant from family guidance association office vigorously explained that youth participation in decision-making process of government issues and community discussions develops self confidence, commitment and informal communication skills. Some of the issues were reproductive health, sexually transmitted diseases and unwanted pregnancies. Such discussion program is also becoming helpful to understand the overall feelings of youth and their intention as to what they are engaging or participating. An informant from Fassilokebele ascertained that even though not represent all, many street children and youth are organized in different associations and have become beneficial. An informant from Shumabokebele also revealed that the contribution of youth is in every aspect of the policy areas.
that play a great role in building democracy and respecting the principles of accountability and transparency.

**Challenges to Youth Participation in the City of Bahir Dar**

**Social and Cultural Influences:** In the city of Bahir Dar, particularly at kebele level, there is lack of entertainment facilities such as sport fields, cultural centers and entertainment areas in the vicinities of youth residential areas and in schools. As a result, youth in school and out of school have been forced to spend their leisure in undesirable places or corners and that makes them unhealthy and unproductive citizens of the city of Bahir Dar. An informant in the city of Bahir Dar from micro and small scale enterprise stated that because of cultural influences, some of youth do not have interest to organize under micro-and small scale enterprises to expand their work opportunities. For instance, graduated youth preferred only government offices and underestimate the possibilities of micro and small scale enterprises. A saying is developed that ‘Batmaris Dengaymefilet Yetatale’ which means; don’t worry; you won’t lose cobblestone work. This misconception can be seen as the barriers of participation; both practical and psychological. An informant from women, children and youth affairs office in the city of Bahir Dar explained that in some part of the society youth are seen as not matured and not allowed leadership position as the saying “Mirakun Yiwat”, by considering their age.

**Economic Challenges:** An informant from Bahir Dar youth league association stated that most of the youth who live in the city of Bahir Dar are unemployed and faced economic problems. For instance, lack of provision of finance, lack of working place and lack of material support, the youth are unable to access in-service training in the city. In some sector offices, plan and strategies are designed with the good will of head offices whether they become pleased to work with youth or sometimes not volunteer. This shows how far youth, especially unemployed free service providers have faced challenges from some government offices and communities due to cultural influences. Another informant, who is unemployed youth in the city of Bahir Dar, asserted that the current cost of living by itself is another challenge of unemployed youth to satisfy their subsistence life and then participate in the decision-making processes by getting time.

**Political Problems:** An interview was conducted with youth league member in the city of Bahir Dar and this has portrayed that, for long years, politics in the face of youth has been associated with electric shock. He also said that until recently, the youth are also far away from any activities in politics. However, recently the youth are becoming members of political parties because those who are not members could not be beneficial in many respects. In reality as observed in the city of Bahir Dar those who are politically affiliated are prioritized for economic benefits than non-political members. In some instances, the involvements of youth in political arenas denied by few local politicians and considered as a free service provider and use them as a messenger for their office work. Informant from HIV/AIDS secretariat office, this indicates that local politicians give due attention to employed and political members than unemployed and civic association members in the city of Bahir Dar.
Figure 3: Interplay of Youth Participation and Causal Relations

Figure 3 above depicts how the challenges are circulating on youth participation and reveal the causal relationships. From this figure, we understand that the influence of socio-cultural barriers, economic problems, and political matters that lead into poor collaboration between different government institutions, NGOs, CBOs, and other private sectors were evident.

**Lack of Coordination of Sector Offices:** As the researcher clearly observed in the city of Bahir Dar, most of government offices were not working in partnership on the issues of youth as responsive bodies. An informant in government office in city of Bahir Dar said that some of the government sector offices believed that the issue of youth should be answered by the responsive office called women, children, and youth affairs because no one knows exactly about youth matters more than this office. An employed youth in the city of Bahir Dar has revealed that due to diverse problems of youth in the city of Bahir Dar, some NGOs have moved away from work in areas of youth affairs and have less attention towards youth issues. In this circumstance, some of the youth were not well organized and did not understand the essence, vision, and mission of youth associations in the city. Likewise youth federation FGD explained that in a clear speech youth association is mainly organized indirectly pushed by political spheres and for their personal interests and lack of work partnership between different government sector offices and NGOs.
4. CONCLUSIONS AND POLICY IMPLICATIONS

The aim of this paper was to examine and assess youth participation in policy decision-making processes in the City of Bahir Dar. It analyzes the experience of the youth and how youth policies were developed and implemented in the city. Based on the analysis and findings of this study conclusion concerning youth participation in policy decision-making processes and other community development issues, commitment of government institutions, NGOs and CBOs and the controlling system of concerned bodies were drawn below:

(1) In the context of social and cultural dimensions the understanding of the community, government and private employees and in some of youth themselves towards youth participation in decision-making process was not well-informed. For instance, when dealing with young people in the city of Bahir Dar, one has to keep in mind that they are not familiar with youth participation strategies and policy decision-making and implementation frameworks.

(2) Youth are abundant and promising resources and their collective energy has yet to be effectively mobilized. Due to lack of collaboration of government institutions, NGOs, CBOs and youth themselves for effective implementation processes, they were seen as incapable of achieving the expected outcomes in the city. There is a gap between policy and implementation process that has been exhibited during the fieldwork and data collected. (3) The findings also showed that lack of commitment of government sector offices, NGOs, CBOs and youth themselves were major problems of youth participation in decision-making processes in the city. (4) The finding also deduced that the controlling and monitoring system of government in policy performance of youth activities was problematic. Even at the starting point in forming youth associations, the members were not organized on the basis of their interest and skills. As a result, only few of the associations and their members were benefiting and others were not. Such trends were creating other shortcomings on the newly forming youth associations in the city. This indicates that there is lack of continues controlling, monitoring and evaluation scheme by concerned bodies on the progress of youth associations. Informants in FGD have agreed up on the fact that the process of youth participation in the city of Bahir Dar was far from getting implemented in practice per the policy framework and the implementation manual.

Implication of the Findings: In pursuit of the objectives of a developmental circumstances characterized by strong collaboration between government institutions, NGOs, CBOs, the private sectors and communities should play huge role in shaping youth as future dependable citizen of the country.

Implications for Policy Makers

➢ The implementation manual should also be inclusive in its approach so as to contribute for democratic development of the country.
➢ To provide capacity building trainings so as to boost the implementation capacity and commitment of local level administrators
➢ To adjust the women, children and youth affair office in to separate work processing units.

Implications for Youth Associations

➢ To increase awareness about the importance and opportunities of participation in decision-making processes among youth, the youth should interact with other relevant stakeholders.
➢ Ensure the value of all participation programs developed by youth associations by involving youth social partners in the planning, implementation and evaluation processes.
Youth should devise their mechanisms for generating their own income.

**Implication for Local Administrators**

- They should develop their organizing capacity; experts and administrators need to be assigned to their positions in accordance with their profession and merits.
- They should develop the practice of transparent and participatory decision-making process.

**Implications for Families and Societies**

- Youth parents are expected to advice and shaped them to be ethically good citizen.
- The second nearby approached bodies are the societies who are required to share ethical values and assets to youth which make them democratic and peaceful citizen of the city.

**REFERENCES**


Constitutional Protections of Ethnic Groups in Ethiopia: The Challenge of Southern Nations Nationalities and Peoples Regional State

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Abstract

This study explored the ethnic quest for self-governance in the Ethiopian federal system focusing on experience from the Southern Regional State. The FDRE Constitution has created a positive interrelationship between practicing the right to self-governance and ethnic identity thereby recognizing it to ethnically defined groups. Therefore, it is justifiable and legitimate for all ethnically defined groups to claim the right to self-governance. The main objective of this study was to examine the ethnic claims for self-governance in multi-ethnic Southern Regional State within the context of Ethiopian ethnic federal system. This study was based on qualitative method approach and the study employed a number of data collection methods such as data from primary and archival sources and secondary literature. The findings of the study revealed that by merging very diverse ethno-linguistic groups into one federated unit, the Southern Nation Nationalities and Peoples Regional State, the existing political system has created minority-within-minority. As a result, those ethnic groups, who have been given their own sub-regional administrative units, have acquired political majority over the subsumed ethnic groups. This has created a feeling of being dominated and marginalized by the subsumed ethnic groups such as Oyda, Goffa, Danta, Tembaro and so on. This is the basic cause for continuing dynamics of ethnic claims for self-governance at Regional, Zonal and Woreda status in this Regional State. The study recommended two policy options: one is to restructure the Southern Regional State and, the other, easiest remedy, is to organize additional Sub-Regional Units for some of the subsumed ethnically defined groups.

1. INTRODUCTION

The new FDRE constitution created a landmark in the history of the country as far as ethnic questions are concerned. This constitution, for the first time, formalized an ethnic-based federal state structure model which gave autonomous right to federated units. This federal arrangement is basically demarcated on the basis of “settlement patterns, identity, language and consent of the people concerned” (Art. 46/2).

The federalization of Ethiopia represents a huge rupture in the country’s political history in that the hitherto marginalized ethnic groups are now entitled to the right to self-determination including secession. It is this rapturous move that made Ethiopia a federal democratic republic consisting of nine federated units (art.47/1), namely Afar, Amhara, Benishangul, Gambella, Hareri, Oromia, SNNPRS, Somali and Tigray.

The SNNPRS is one of the nine federated units currently divided into 14 administrative zones and 4 Special Woredas. It is the most multi-ethnic regional state in the country. It was established after the merging of the five regional units (kilil 7-11) organized in today’s south during transitional period. This merger, however, has been provoking political mobilization.

From the 14 regional units or kilils established by proclamation no.7/1992 during the transitional period, five of them (7-11) were organized in the areas comprising today’s
The quest for re-establishment of regional self-administration status by Sidama and zonal self-administration status by Wolayita, inter alia, were prominent cases in point in the SNNPRS (Aalen, 2008). For self-governance, such similar ethnic claims have continued to become significant political factors in the region. This study is, therefore, aspired to examine the continuing dynamics of ethnic claims for self-governance and how these ethnic claims have been causing inter-ethnic tensions and conflicts in this Regional State within the context of Ethiopian federal system.

The FDRE constitution has created a positive interrelationship between practicing the right to self-governance and ethnic identity thereby recognizing it to ethnically defined groups in the country. Therefore, it is justifiable and legitimate for all ethnically defined groups to claim the right to self-governance. Article 39(3) of FDRE constitution clearly stipulated that each nation, nationality and people has the right to a full measure of self-government thereby establishing their own territorial institutions of self-government and be represented equally at the state and federal level. Similarly, article 39(3) of SNNPRS’s constitution recognizes exactly similar right to ethnically defined groups in the region. Despite this constitutional entitlement, a few ethnic groups are exercising this right notwithstanding the recurrent demand of some ethnic groups. Considering this, one might ask is the constitutionally recognized right to self-governance fully respected for all ethnically defined groups in the South? Is the government accommodating ethnic claims for self-governance in accordance with the constitutional provisions? These are issues this study grapples with.

By conglomerating very diverse ethno-linguistic groups, the existing political arrangement has created minority-within-minority in the SNNPRS. As a result, several ethnic groups within this state came up with a series of demands for recognition of separate ethnic identities and having an administrative structure. The calls for re-establishment of Regional status by Sidama and for separate administrative autonomy at zonal level from multi-ethnic Simen Omo zone by the Wolayita, among others, were prominent cases in point in the SNNPRS (Aklilu, 2003 and Aalen, 2008). By taking this into account, one might ask is there any institutional mechanism to realize the basic self-governance aspiration of these conglomerated ethnic groups under existing political order in the SNNPRS? These are issues this study grapples with.

Given the multi-ethnic nature of SNNPRS, it is expected that there exists a room for the establishment of sub-national levels of administration that are meant for the self-governance of smaller ethnic groups. Currently, there exist only 18 sub-Regional administrative units in the region. However, it is quite elemental to ask as to why only these sub-Regional administrative units were created against the existence of 56 ethno-linguistic groups. In SNNPRS, more than 50+ ethno-linguistic groups do not have their own zones or special woredas designated by their own names (Beken, 2008). These ethno-linguistic groups either live in multi-ethnic zones like Debub Omo or are a minority group in a zone or special woreda dominated and designated by the names of other groups. It is quite vital to ask did the emerging ethnic claims in SNNPRS emanate from the groups’ desire to exercise the right to self-governance or is it the effect of deliberate manipulation of elite for their own personal fiat? These are issues; therefore, this study grapples with.

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Refers to subsuming one minority ethnic group under administrative unit dominated and designated by the name of another minority ethnic group.
The existing ethnic assertions for self-governance in the SNNPRS, like that by the Oyda, Goffa and others, are motivated by the fact that the constitution gives them the right to self-determination. It is justifiable and legitimate for all ethnically defined groups to come up with claims of self-governance as long as they see themselves as fulfilling the criteria that the constitution draws up in article 39/5 so as to give the status of ethnic group and hence, the right to self-governance. Tsegay (2001) argues that the merging of ethnicity and the right to self-governance encouraged various ethnic groups to assert their ethnic identity. Are an increasing number of ethnic assertions for separate ethnic identity and self-governance at various levels in the SNNPRS encouraged by merger of ethnicity and exercising the right to self-governance? These are basic inquiry, thus, this study grapples with.

Even though a handful empirical ‘top-down’ research have been done in the SNNPRS both by Ethiopian scholars and expatriates on issues of ethnicity, ethnic identity and quest for self-governance, there are still many cases to be addressed at the bottom. In this regard, the revival and development of distinct ethnic identity and quest for self-governance among some ethno-linguistic groups such as, Goffa, Tembaro, Oyda, Danta and others; the reasons that made their pressing question ineffective for having self-government and some other related issues have not yet fully researched. Thus, there perhaps exists an evident knowledge gap that ought to be filled through research undertakings at the grassroots level. Therefore, by delving itself into the investigation of this timely research topic, this research shall endeavor to accomplish that task.

Objectives of this study were to:

- explore how far the ethnic federal model and concomitant right to self-determination has virtually addressed ethnic claims for self-governance in the SNNPRS, and
- investigate the causes for ethnic claims for self-governance in SNNPRS.

By analyzing the continuing dynamics of ethnic claims for self-governance in SNNPRS, the study may have the following significances:

- It may contribute to the understanding of the continuing dynamics of ethnic claims for self-governance in the SNNPRS.
- It may help to understand the extent to which the existing post 1990s policy initiatives such as federal state structure and constitutionally recognized right to self-governance have virtually addressed ethnic claims for exercising the rights in Ethiopia in general and the SNNPRS in particular.
- It may provide concrete evidence for policy makers, formal government institutions and other concerned bodies responsible in handling and resolving this and other similar cases in SNNPRS.
- Finally, this study may serve as a base for future further research in the area.

2. Research Methodology

This research is based on qualitative method approach mainly with peace and security orientations. For this research, non-probability sampling techniques, particularly of convenience and judgmental were employed to select the sample.

The primary and secondary data were collected by using different instruments. Primary data were collected through interview, legal documents analysis and official letters. The legal
documents include transitional period charter, federal and SNNPRS constitutions and proclamations. The official letters include those letters ethnic groups in the SNNPRS have written to or received from any concerned government bodies so as to analyze the continuing dynamics of ethnic claims for self-governance. This study also made use of secondary sources, such as books, journals, thesis, dissertation, articles and soon. As long as data analysis was concerned, this study made use of concurrent methods of data analysis in which different narratives, perspectives, analytical and conceptual expressions, and theoretical approaches were used within the contextual framework of data analysis.

3. Discussion and Results

Dynamics of Ethnic Groups’ Quest for Self-Governance in SNNPRS: During the transitional period, five regional units (kilil 7-11) were organized in the areas comprising today’s SNNPRS by the Proclamation no.7/1992 that established a total of 14 National/Regional self-governing Regions (kilils). Ethnically defined groups within these five Regional units also managed to gain the status of self-governance. It appears that the transitional period administrative arrangement fit well with the government rhetoric of “liberating the oppressed nationalities” of the South. Consequently, the then TGE’s policy initiatives managed to accommodate the basic self-governance aspirations of both larger, which had been administrative units in the past (like, Sidama) and smaller ethnic groups, achieved a newly won administrative status, in the south at the time.

Right to Self-governance: Producing Conflict in SNNPRS: In stark contrast to Ethiopia’s constitutional engineering, the FDRE constitution entitled ethnically defined groups have the right to self-determination including secession (Art.39/1). While entitling ethnic groups of the south to this higher right, the government has merged together diverse ethno-linguistic groups into one federated unit from the previous five Regional units. It seems that this merger is not only contradicting with principles of the new constitution but also equally depriving their right to self-governance that they had already accorded.

The merger of 56 ethnic groups was one of the points of controversy in the south. There are two contending controversies concerning this merger. Accordingly, some argue that the merger was an initiative which came from the Southerners themselves after thorough discussion before it was finally decided. However, others mentioned that the merger was the initiative of the central government; hence, the southerners accepted it, but would never have suggested it if EPRDF did not, according to government officials. If the merger was the expression of the expressed consent of 56 ethnic groups, ethnic assertion for separate ethnic identities and self-governance in the SNNPRS would not be a significant political factor that posed a challenge for the government.

Is it realistic to expect that an ethnic group will choose to be at zonal or woreda or kebelle strata of administration in the south with a reduced power if they have an opportunity to be at regional status of administration? Mesfin (1999) argues that no people will knowingly “consent” to be in the second order “zone” if they have the choice to be in the first order “State”. If the merger of the five former regions into one federated unit is the expression of the expressed consent of 56 southern ethnic groups, there would be no need of increasing ethnically defined zones from nine to thirteen and special woredas from five to eight following violent ethnic claims for separate ethnic identities and self-governance in multi-ethnic Simen Omo and Kafa-Shaka zones in 2000.

After persistent ethnic questand increasing violence, particularly Wolayta, for self-governance, the government allowed the disintegration of multi-ethnic Simen Omo zone into five unitsin
2000: three zones- Dawro, Wolayta and Gamo-Goffa zones and two special woredas- Basketo and Konta. Thus, pressing ethnic claims for self-governance at different levels and their resort to violence at times showed that the merger was not the manifestation of their expressed consent of the ethno-linguistic groups of SNNPRS.

As data from different sources shows, the current administrative arrangement in the SNNPRS satisfied neither the ethnic groups given their own mother zone nor ethnic groups subsumed into different zone or special woreda designed by the names of other ethnic groups. Even if the Sidama managed to keep a separate self-governance at zonal level after the controversial merger of five regions, the degeneration from region to zonal status not only undermined their confidence but also has provoked quest for re-establishment of regional status (see also Aalen, 2008).

Unlike a de-concentrated zone, for instance, in Oromiya region, the zones and special woredas in the SNNPRS are ethnically defined but multi-ethnic in nature which is an evidence for creating minorities-within-minorities. Demands for recognition of self-governance by many ethnic groups, namely Oyda, Goffa, Ale.Tembaro and others, except Sidama, in this regional state have not been for regional status but for the zonal or special woreda status that reflect their separate ethnic identity and provide, at least in principle, the opportunity of self-government. To sum up, the government consolidated the diverse ethnic groups of previous five regional units into one unit-SNNPRS without establishing institutional mechanism to enable them to realize their right to self-determination.

Creating Minority-within-Minority: Main Cause for Ethnic Quest for Self-Governance: Article 45/1 of SNNPRS constitution provides a four-tier of internal administrative structure: the Regional/State level, zonal/special woreda, woreda and finally the kebele level. Currently, it is administratively divided into 14 zones and 4 special woredas. Hence, 56 diverse ethno-linguistic groups are arranged along these administrative hierarchies. From the territorial administrative arrangement of the south, one can observe clear similarities with the national level. The larger ethnic groups in the region have given their own “mother zone” or “special woreda” while other ethnic groups constitute minority within one of these entities.

In SNNPRS, only a few ethnic groups have exercised the rights to zonal or special woreda level of administration.

Most of the Southern State’s 50+ ethnic groups do not have their own zone/special woreda. These groups either live in a multi-ethnic zone or are a minority group in a Zone dominated by another group (Beken. 2008:23).

An astonishing fact is not only the merger of 56 ethno-linguistic groups but the government’s disinclination to organize many sub-regional units even within this one federated unit in a manner that enables these diverse ethnic groups to realize their constitutional right to self-governance.

As a result, many ethnic groups were made to form a minority within one of ethnically defined zones or special woredas or made to live together in a multi-ethnic zone or special woreda like Debub Omo and Gamo Goffa Zone without establishing institutional mechanism that enable
them to realize their socio-economic and political interests. It is not surprising if there is resentment and at time resort to violence and conflicts by some ethno-linguistic groups, such as the Ale, Goffa, Tembaro and Danta against their minority status in the sub-Regional units dominated by another groups.

By merging together very diverse ethnic groups, the existing ‘territorial approach’ of ethnic-based federal model anomalously created minority-within-minority in the SNNPRS. For instance, Gamo-Goffa zone, which was born from the disintegration of the Simen Omo zone in 2000, is the home of five ethnic groups: Gamo, Goffa, Zeise, Oyda, and Gidecho. However, the zone was designated by the name of two dominant ethnic groups: Gamo and Goffa. As a result, the subsumed ethno-linguistic groups, particularly Oyda, have felt that they have been dominated and marginalized due to their subsumed status in the zone designated by the name of others. This is the major cause for Oyda quest for distinct ethnic identity and self-governance at special woreda status.

Despite the existing and increasing ethnic groups claims for self-governance in the region, the disinclination of the government to adequately address these claims and their resort to violence and conflicts have raised a considerable doubt about the wisdom of substantive autonomy rights recognized in the constitution. The continuing dynamics of ethnic claims for self-governance by subsumed ethnic groups are adversely affecting a long period of mutual inter-dependence and co-existence among diverse ethnic groups in the region. In addition, it is also evidence for the fact that till then marginalized and dominated ethnic groups in the south have not yet fully empowered. And yet, it is an evidence for the fact that the communities that have defined themselves along ethnic lines are denied the right to self-rule that creates a difference between the principles promised in the constitution and practice that produce violence, inter-ethnic tensions and conflicts in the SNNPRS. Government recognition of distinct ethnic identity and self-governance at zonal level and disintegration of multi-ethnic semen Omo and Kaffa-Sheka zones in 2000 were an evidence for this reality in the region.

Inconsistency in implementing the right to Self-governance and Federal Formula: As a major positive departure from the past, EPRDF regime adopted ethnic-based federal formula perhaps to enable ethnic groups to administer themselves by devolving power along ethnic lines. Practically, however, some inconsistencies and mutually incompatible policies and implementation procedures have prevailed so far. This is due to the problem either inherent in the model itself or thrown up during its execution. As a result, its record has met with a varying degree of success in accommodating ethnic quest for self-governance. Accordingly, it has faced somehow challenges related with emergent and existing ethnic assertions.

There emerged a number of anomalies in operationalising the federal formula on the basis of ethnicity and language. In some cases, a number of ethnic groups with sizeable population were not considered within the national federal formula, whereas the Hareri minority group, for example, was accorded the status of a “regional-state” while a large number of ethnic groups were amorphously conglomerated under the “SNNPRS” creating a further anomaly (Aklilu, 2003:38).

However, the admirers have hailed this ethnic federal model as an aspect of democratization of the state and even as a model for other multi-ethnic states in Africa (Dereje, 2006; Young, 1996).
According to the 2007 Population and Housing Census, only 10 ethnic groups have a population of one million and above in Ethiopia. From these 10 major ethnic groups, five of them, namely Gurage, Hadiya, Welayta, Gamo and Sidama are from the SNNPRS. In the same census, the Harer have a total of 31,869 or 0.04% of population of the country which is one of the smallest in the country but allowed to have their ‘own mother state’. If the Hareri merit the status of a regional state, why would these five major ethnic groups choose to be in the second order “zone” rather than have their own ‘mother state’? “If the population of the Harer warrants the status of a regional state, then all language groups that have the same or higher population size must have states (Mesfin, 1999:161).

However, this comparative perspective should not be considered as the Hareri would not have a region, it is rather to show the mixed results of ethnic-based federal model and concomitant right to self-governance in addressing ethnic demands for the same right in region. The continuing dynamics of ethnic quest for self-governance are thus not only the result of lack of respect for constitutionally fledged rights but also inconsistency in implementing them.

**Primordial Approach for Defining Ethnic Groups: Setting Fixed Criteria:** The FDRE constitution defines ethnic group as clearly distinguishable cultural groups akin to the primordial definition of ethnicity (Aalen, 2008). Article 39/5 of the constitution defines nation, nationality and people as:

* A group of people who have or share a large measure of common culture of similar customs, mutual intelligibility of language, belief in a common or related identities, a common psychological make-up, and who inhabit an identifiable, predominantly contiguous territory.

This definition gives the interpreters of the constitution i.e. House of Federation (the 2nd national chamber) the right to define from outside, which congregation of people are entitled to the status as ethnic group, and hence who has the right to self-governance. The criteria used are focusing on primordial traits and all traits are expected to be easily identifiable from outside. In addition, the criteria for establishing “nations, nationalities and peoples” are objectively and externally identifiable, based on fixed characteristics that can be ascribed from outside, without the involvement or self-reflection of members of the ethnic group. Thus, it is sensible and justifiable that the vanguard party, from outside, can grant self-governance to ethnic groups which have fulfilled the criteria that the constitution has set.

It is the merging of ethnicity and the right to self-determination which is made sacred constitutionally encouraged various ethnic groups to assert their ethnic identity (Tsegay, 2001). Due to this positive correlation, ethno-linguistic groups that did not until now look up on themselves as ethnic entities now came up with such claims of establishing their own self rule that reflect their identity.

Based on the constitutional definition of nation, nationality and people, one can define ethnic groups in Ethiopian context as people with their own common culture or custom, language, identity, psyche, and contiguous territory. However, one of the key question to be asked is can the subsumed ethno-linguistic groups, such as the Oyda, Goffa, Danta and Tembaro fulfill this definition of ethnic group or the fixed criteria the regime has set so as to grant the status of ethnic group and hence, the right to self-governance? As evidenced by the study, most ethnic groups claiming self-governance in the region can fulfill the fixed criteria the regime has set to grant the status of ethnic group and hence, they can deserve the right to self-governance.
Reasons for Administrative Integration in SNNPRS: Even though there are persistent and prolonged ethnic demands for recognition of distinct ethnic identity and self-governance at various levels, the government continued to contain ethnic claims. According to regional government officials, “ethnic entrepreneurs” are mobilizing their respective ethnic identity to get separate administrative units in the names of the right to self-governance only as a cover-up for seeking personal fiat. For Vaughan (2003), the main reason for continued dynamics of ethnic claim for self-governance in the SNNPRS is the result of policy shift from an “ethnic free for all” policy to a policy of “ethnic containment” by EPRDF government. Thus, government is working to stop administrative disintegration and to prevent ‘rent-seeking’ political elites from seeking their own advantages by the name of ethno-linguistic groups rather than containing ethnic claims for self-governance as there is no any such move in the region.

In a country where there is ethnic based federal model and unprecedented and novel constitutional arrangement, Young (1996), even in Africa that guarantees for every ethnic group the right to self-determination, including secession, the continuing of ethnic claims for self-governance in Ethiopia is astonishing truth. Recognizing the self-governance right for the subsumed groups may create no any challenge but rather brings a new prospect for sustainable peace.

4. CONCLUSIONS AND RECOMMENDATIONS

Conclusions: The aim of adopting federal model and constitutionally recognizing the right to self-determination for all ethnically defined groups is to address ethnic claims for self-governance. However, these ethnic claims for self-government have continued to this day. Many ethnic groups are still battling peacefully or violently for the right which is made sacred to them legally. The government’s reluctance to address the ever increasing ethnic demands and their resort to violence has raised a considerable doubt on the practicability of the existing constitutional principles. The experience from the subsumed ethno-linguistic groups in particular has shown that the hitherto marginalized and dominated ethnic groups are far from enjoying the fruit of legally guaranteed rights. Thus, any observer of actual reality in SNNPRS agrees that there are serious discrepancies between the principles made in the constitution and the practice on the ground.

Moreover, the continuing dynamics of ethnic claim for self-governance is adversely affecting the long established mutual inter-dependence and co-existence among ethnic groups in the region. In response to government’s continued containment of their long-standing claim for self-governance since 1995, there was violence by the Ale ethnic group in 2008. It was an evidence for the fact that the subsumed ethno-linguistic groups claim for self-governance has emerged as a testing challenge of a minority-within-minority in the South. And yet, the existing administrative arrangement in the region is adversely affecting the inter-ethnic relations that need to be addressed sooner than later.

From the overall conclusions, one can draw that there is a gap in the way how the constitutional provisions protect the rights of ethnic groups of the South. The self-governance right recognized in the constitution is not yet fully implemented, and as a result, there is continuing dynamics of ethnic claims. The key question to be asked now is, what recommendations should follow?
Recommendations: In this article, the following two policy options are recommended as viable solutions.

Reorganizing Southern Regional State: In the feudal as well as the Derg era, diverse ethnic groups of today’s SNNPRS was never under a single administration and a unified area in their socio-economic and political history. During its transitional phase, the EPRDF regime had organized five regional units (kilil 7-11) by proclamation no.7/1992. Therefore, by taking into account the political, historical, linguistic and geographic contexts, including EPRDF’s administrative arrangement during the transitional period, restructuring SNNPRS in a manner which reflects the essential attributes of the existing ethnic diversity is a point which is worth emphasizing in a more open-minded ways. This restructuring should be with the objectives of:

A. virtually ensuring the right to self-governance;
B. bringing administrative convenience and political symmetry;
C. providing diverse ethnic groups with institutional avenues at different levels of decision-making; and
D. abating possible threat to peace and security emanating from increasing ethnic assertiveness.

Organizing Additional Zones or Special Woredas: It will be essential to adopt further decentralization even at state level to enable diverse ethnic groups of the region to realize their right to self-governance and hence, for enhancing peaceful co-existence of ethnic groups despite possible resource constraints. There should be strict application of ethnic groups’ right to administer their own affairs within their own defined territory for those ethnic groups who don’t have currently their own administrative units that reflect their separate identities. This will help to:

A. keep these ethnic groups distinct from the majority that dominate the political process at sub-regional units level;
B. bring genuine power sharing among diverse and contending groups and a regional government that is acceptable to all; and
C. avoid horizontal or local level dominance and marginalization and hence localized inter-ethnic tensions and conflicts in the region.

These are perhaps the some viable solutions to address increasing ethnic claims for self-governance and its subsequent tensions, violence and conflicts in the region.

Let me end on an optimistic note, in the realm of Peace and Security dealing with ethnic demand for recognition of ethnic identity and self-government would be important for sustainable peace and security to prevail. Whenever ethnic group demands are securitized, ethnic relations will eventually settle into a stable and peaceful pattern. However, refusing to accommodate ethnic claims through legal means can play into the hands of the lack of good governance and broken down of the mutual interdependence and co-existence in the inter-ethnic relations. This is because the feeling of being deprived and excluded by ethnic groups will clearly reinforce inter-ethnic tensions and violence. Thus, to accommodate ethnic claims in multi-ethnic Southern Region, federal system should be continuous and dynamic process rather than being reduced to static and permanent administrative structures.
REFERENCES


लिखित हिंदी भाषावर्गीकृत ग्रंथ के एक पृष्ठ के चित्र प्रदर्शन।

1. जिन दिनों ने नॉर्सिंग के प्रेरणा के लिए कृत किए थे?
2. इसके बाद कौन रही?

लिखित हिंदी भाषावर्गीकृत ग्रंथ के एक पृष्ठ के चित्र प्रदर्शन।

निष्कर्ष

निष्कर्ष का निष्कर्ष आवश्यकता है।
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