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**THE CONTRIBUTION OF COBBLESTONE WORKS IN
EMPLOYMENT AND INCOME GENERATION:
The Case of Burayu Town of Oromia Region**

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Master of Arts in Regional and Local Development Studies**

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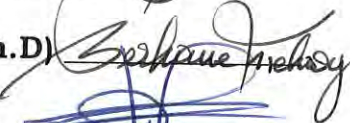

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Abstract

The Contribution of Cobblestone Work in Employment and Income Generation: The Case of Burayu Town of Oromia Region.

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In Burayu Town, the rapid urban population growth over and above the development of socio-economic services and institutions are the main cause for urban unemployment. It is the town located at 15 k.ms away, from Addis Ababa to the west direction. The town has six kebeles and 114,426 populations; and served as a satellite city to Addis Ababa, the capital city of Ethiopia.

For the attainability of the desired objectives, both primary and secondary source of data are employed. A quantitative method is utilized and the data are collected through survey by employing questionnaire as well as key informant interviews, group discussions and it is analyzed using descriptive statistics. From the existing 550 total operators, 85 were selected in simple random sampling and took part in filling out the questionnaires. The interviewed and group discussion participants were selected in purposive sampling.

The findings of the study indicate that MSEs (Micro and Small Enterprises) of cobblestone works are a good meditation for urban unemployment problems in income earning and poverty reduction. It has brought significant socioeconomic benefits, in improving the operators' income, create wealth, enabling them to save their income and improving social values of the environment. However, the works have faced different challenges in financing, administrating, transporting raw materials and safety in the work area. To achieve full employment, the city government has to widen other investment opportunities, realize work area safety, and co-work with the community and other voluntary associations such as Community Based Organizations (CBOs) and the Non-Governmental Organizations (NGOs) to raise funds in the local area development programs.

Key words: *Burayu town, urban problems, unemployment, urban poverty, MSE operators, cobblestone work.*

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List of figures

	pages
➤ Figure 3.1 Location of the study area -----	37
➤ Figure 4.1 Sex compositions in pie chart -----	52
➤ Figure 4.2 Marital status -----	54
➤ Figure, 4.3. Total number of cobblestone operators -----	58
➤ Figure 4.4 Income ranges of the operators after they join the cobblestone work -----	63
➤ Figure 4.5 Frequency of operators with and without additional sources of income -----	66
➤ Figure 4.6 grading the supports provided to MSEs (pie chart) -----	70
➤ Figure 4.7 Major problems on cobblestone works (by pie chart) -----	73

List of Tables

	pages
➤ Table 3.1 <i>Summary of Sampling procedure and tools</i>	37
➤ Table 3.2 Population growth rate of the town -----	46
➤ Table 3.3 Projected age composition of the population in 2011-----	46
➤ Table 4.1 Sex composition of the Respondents -----	51
➤ Table 4.2 Age category of the Respondents -----	52
➤ Table 4.3 Marital status of the Respondents -----	53
➤ Table 4.4 Mean of Family size -----	53
➤ Table 4.5 Educational level and gender classification -----	55
➤ Table 4.6 Position of the respondents -----	55
➤ Table 4.7 Previous employment status -----	56
➤ Table 4.8 Reasons why they join the cobblestone work-----	57
➤ Table 4.9 Table of the Paired Samples T-Test -----	61
➤ Table 4.10 Gender consideration of income recipients -----	62
➤ Table 4.11 Asset created due to the changes of income -----	64
➤ Table 4.12 Other source of income indicators -----	65
➤ Table 4.13: Monthly saving capacity of the respondents -----	65
➤ Table 4.14 Trainings -----	68
➤ Table 4.15.Types of support in ranking -----	69
➤ Table 4.16 Major challenges on the cobblestone works -----	72
➤ Table 4.17 Analysis of cobblestone works and health associations -----	74
➤ Table 4.18: Continuity of the cobblestone work -----	75
➤ Table 4.19 Sustainability of the cobblestone work -----	77
➤ Table 4.20 Participation of the cobblestone work -----	78

Abbreviations

BoFED:	Bureau of Finance & Economic Development
CBO:	Community Based Organization
CSA:	Central Statistical Authority
EUNDF:	Ethiopia United Nations Development Assistance Framework
GIZ (the former GTZ):	German Technical Assistance
GTP:	Growth and Transformation Plan
GTP:	The Growth and Transformation Plan of Ethiopia
MEDAC:	Ministry of Economic Development and Cooperation's
MoFED:	Ministry of Finance and Economic Development
MSE:	Micro and Small Enterprise
MTIT:	Ministry of Trade, Industry and Tourism
MUWD:	Ministry of Works and Urban Development
NGO:	None Governmental Organization
NUDP:	National Urban Development Policy
NUPI:	The National Urban Planning Institute
PASDEP:	Plan for Accelerating and Sustainable Development to End Poverty
PRSP:	Poverty Reduction Strategic Program
SSA:	Sub Saharan Africa
TVET:	Technical and Vocational Education and Training
ULGDP:	Urban Local Government Development Project
UN:	United Nations
UNCHS:	United Nations Center for Human Settlements
WB:	World Bank

Contents	pages
<i>ABSTRACT</i>	
ACKNOWLEDGEMENTS	
<i>LIST OF FIGURES</i>	
<i>LIST OF TABLES</i>	
<i>ABBREVIATIONS</i>	
<i>TABLE OF CONTENTS</i>	

CHAPTER ONE: INTRODUCTION 1

1.1 BACKGROUND	1
1.2 STATEMENTS OF THE PROBLEM.....	3
1.3 BASIC QUESTIONS.....	5
1.4 OBJECTIVES OF THE STUDY	5
1.4.1. GENERAL OBJECTIVE	5
1.4.2. SPECIFIC OBJECTIVES.....	5
1.5 SIGNIFICANCE OF THE STUDY	6
1.6 DELIMITATION OF THE STUDY	7
1.7 LIMITATION OF THE STUDY.....	7
1.8 ORGANIZATION OF THE PAPER.....	8

CHAPTER TWO: LITERATURE REVIEW 9

2.1. INTRODUCTION	9
2.2 DEFINITION OF TERMS	9
2.3. CAUSES OF URBAN UNEMPLOYMENT IN CITIES OF DEVELOPING COUNTRIES	11
2.3.1 UNDERDEVELOPED INFRASTRUCTURE.....	12
2.3.2 UNCONTROLLED POPULATION PRESSURE.....	14
2.4 URBAN PROBLEMS IN ETHIOPIA.....	16
2.4.1 URBAN DEVELOPMENT AND THE MUNICIPAL SERVICES	17
2.4.2. GENDER AND URBAN POVERTY.....	18
2.5 URBAN PROBLEM SOLVING STRATEGIES.....	20
2.5.1 ORGANIZING MSEs.....	20



2.5.2 URBAN MICRO AND SMALL ENTERPRISE STRATEGIES	21
2.5.3 OPPORTUNITIES FOR MSE DEVELOPMENT.....	23
2.5.4 CONSTRAINTS FACING THE MSE SECTOR.....	24
2.6 SOCIO-ECONOMIC CONTRIBUTIONS OF COBBLESTONE WORK	26
2.6.1 ECONOMIC CONTRIBUTIONS	27
2.6.2 SOCIAL CONTRIBUTIONS	28
2.6.3 EMPLOYMENT CONTRIBUTIONS	29
2.7 CONCEPTUAL FRAMEWORK	31

CHAPTER THREE: METHODOLOGY AND DESCRIPTION OF THE STUDY AREA 34

3.1 METHODOLOGY OF THE STUDY	34
3.1.1 DATA SOURCE.....	34
3.1.2 DATA GATHERING TECHNIQUES AND TOOLS	34
3.1.3 SAMPLING.....	35
3.1.4. DATA ANALYSIS AND PRESENTATION	35
3.1.5. DATA GATHERING PROCEDURES AND SIZE	36
3.2 DESCRIPTION OF THE STUDY AREA	37
3.2.1 LOCATION.....	37
3.2.2 HISTORICAL BACKGROUND	39
3.2.2.1 Naming	39
3.2.2.2 Municipality Functions	39
3.2.3 URBAN PLANNING	40
3.2.3.1 The Existing Road Networks	41
3.2.3.2 Community participation.....	42
3.2.3.3 Transportation services	43
3.2.3.4 Existing Land Use	44
3.2.4 SOCIOECONOMIC SITUATIONS OF THE TOWN.....	44
3.2.4.1 Population Pressure	45
3.2.4.2 Unemployment Rate.....	47
3.2.4.3 Micro and Small Enterprises (MSE)	47
3.2.4.4 Informal Sector Activities	48
3.2.4.5 Availability of Financial Institutions.....	49
3.2.4.6 Urban Waste Management Activities.....	50

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION 51

4.1. BACKGROUND OF THE RESPONDENTS 51

4.1.1 SEX AND AGE COMPOSITION OF THE RESPONDENTS 51

4.1.2 MARITAL STATUS AND FAMILY SIZE OF THE RESPONDENTS 53

4.1.3 EDUCATIONAL LEVEL OF THE RESPONDENTS 54

4.1.4 POSITION OF THE RESPONDENTS IN THEIR FAMILY AND COOPERATIVES 55

4.1.5 PREVIOUS EMPLOYMENT STATUS 56

4.1.6 REASONS FOR JOINING COBBLESTONE WORK 57

4.2 CONTRIBUTIONS OF THE COBBLESTONE WORK 58

4.2.1 EMPLOYMENT GENERATION 58

4.2.2 RELATIVELY BETTER INCOME EARNING 60

4.2.3. IN GENDER CONSIDERATION 61

4.2.4 ASSET CREATION 63

4.2.5 OTHER SOURCE OF INCOME 64

4.2.6. ENABLING THEM TO SAVE 66

4.3 SUPPORTING STRATEGIES FOR THE MSE WORKS 67

4.3.1 TYPES OF SUPPORTS 68

4.4 CHALLENGES OF THE COBBLESTONE WORK 71

4.4.1 TRANSPORTING RAW RESOURCES 72

4.4.2 WORK AREA SAFETY 73

4.5 EMPLOYMENT ABSORPTION OF THE COBBLESTONE WORK 74

4.6 SUSTAINABILITY OF THE COBBLESTONE WORK 76

4.7 COMMUNITY PARTICIPATIONS 78

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS 80

5.1. CONCLUSION 80

5.2 RECOMMENDATIONS 82

REFERENCES

Annexes

CHAPTER ONE: INTRODUCTION

1.1 Background

In the early 19th century, the fraction of world population living in the cities was only 3%, O'sulvan cited in Girma, (2011). Between 1950 and 1990, the world's urban population was increased more than tripled, from 730 million to 2.3 billion. Between 1990 and 2020, it is likely to be double again to over 4.6 billion. Of the total increment, 93% are from the developing world (Devas & Rakodi, 1992).

In 1950s, there was 38% of the total urban population of the world were living in the cities of developing world (Todaro & Smith, 2003). According to the united nation estimates, cited in Todaro & Smith (2003), in 2025 there will be about 80% of the urban dweller of the world population will be from the developing regions.

The developed part of the world is already highly urbanized. In countries like Belgium, UK, Hong Kong and Singapore, there are about 90% of their population living in the urban, while in developing countries like Nepal, Uganda, Rwanda and Burundi less than 10% of their population living in the urban areas (Devas & Rakodi, 1992). During the period of 1970-1980, the growth rate of the urban population in developed countries were less than 1% per annum, while there were 3.7% annual growth rate of the developing world in general and Africa's in particular the growth rate exceeded 7% per year (ibid).

The principal problems that are associated with the urbanization process in the developing world have increased because of the failure to cope up with its effects. The failure to government's services provision to meet the basic needs such as land, shelter, infrastructures and public services for the city population (Devas & Rakodi, 1992). Here urban growth is not problematic by itself, but the rapid rate of growth, which outpaces the institutional, administrative and financial capacity to cope up with it, is problematic for most of developing cities (ibid).

Arthur Lewis, in his labour surplus theory of economic growth, cited in Devas & Rakodi (1992), suggested that the path to prosperity for the under-developed countries of the world is to invest in industry, which would draw surplus and unemployed labour out of the subsistence agricultural sector. Through such process, Lewis argued that, the total output of the economy could increase without loss of agricultural production.

Urbanization in Ethiopia is increasing in a faster rate at about 4.34% (CSA, 1997). At this rate, the urban population increased in about half a million every year. However, the socio-economic growth, infrastructure and urban services are not increased at the same pace to absorb this demographic change. Due to these reasons, unemployment rate is elevated, shortage of urban services raised, and environmental degradation and pollution is lifted up. In general, urban problems are aggravated. Impossibility to access income earning opportunities, lack of insecure accommodation and poverty are aggravated. To solve such problems, employment generating scheme are designed in multi-directionally. Municipalities are organizing those unemployed people into Micro and Small Enterprises (MSE) to create their own job. One of which is cobblestone work. In Ethiopia, many cities and towns are under the construction of cobblestone roads (GTZ, 2011). Oromia

Regional state is also one of those Regions that are implementing cobblestone works in its different cities and towns. The Region has 6 larger towns or first grade cities (Adama, Bishoftu, Jimma, Shashamane, Burayu and Naqamte).

Among those cities, this research paper focuses on the socio-economic significance of the cobblestone work to curb urban problems at Burayu Town. In this town, to what extent the cobblestone works able to solve urban problems are going to be analyzed. Quantitative data are gathered from cobblestone operators by systematic random sampling in questionnaire and analyzed in descriptive statistics. Qualitative data are also gathered through purposive sampling technique in interview and focus group discussion with the leaders and experts of micro and small enterprise of the Burayu city respectively. The qualitative data are narrated at the important subject matter.

1.2 Statements of the problem

Urban poverty incidence in Ethiopia has been increased from about 33% in 1995/96 to about 35.1% in 2004/05 (Tegegne and Meheret, 2010). The urban unemployment rate is also about 25% of the total employable population (Tegegne and Meheret, 2010). World Bank (2008) estimated the average rate of unemployment in Ethiopia to be about 48% in 2004. While a survey conducted by the United Nations Development program (UNDP), mayors from 135 cities worldwide have rated these pressing urban problems as: unemployment 63%, inadequate housing 43%, garbage disposal 38%, violence/crime 36%, poverty 34%, sanitation sewerage 33%, air pollution 32%, inadequate transportation 29%, inadequate water supply 24% ... etc (BoFED, 2007).

In addition, Meheret (2001) also stated that the rapid growth of the urban population has placed a great pressure on the management capacity of municipalities for service delivery and local economic development. According to the writer, municipalities were exposed to different burdens. These are inadequate housing, crumbling urban infrastructure, poverty and unemployment, inadequate water and electricity supplies, poor sanitation systems and environmental neglects (Meheret, 2001).

Studies made by some researchers of cobblestone focused on the Cobblestone pavement as an alternative in the road infrastructure networking and its contribution in reducing unemployment in the case of Adama City (Adem, 2011) and the Contribution of Cobblestone paved road technology practice by ULGDP (Urban Local Government Development Project) in Bishoftu City (Abebech, 2011). Both are based on the physical infrastructure contribution to their respective cities and are not on the significance of the work. Unemployed peoples are organized and made to participate in micro and small enterprise of cobblestone work without any limit. Moreover, consolidated research works on the socio economic significance in income generation and its employment absorption capacity of the work are not studied still in the study area. To fill this gap, this research is aimed at dealing with socio economic significance of the work to curb urban unemployment problems in Burayu Town. The town has experienced rapid urban growth as the results of many factors, such factors are: demographic, economic, political, proximity and being a satellite city to Addis Ababa, the capital city of Ethiopia.

Therefore, this study describes the extent to which the socio-economic significance of cobblestone works that it is able to generate employment in Burayu Town and its

strength to alleviating poverty from the town. In addition, problems that are associated with challenges of the works in Burayu Town are identified.

1.3 Basic Questions

The research focuses on the following basic questions and is going to answer them.

These questions are:

- i. Is the cobblestone work able to generate sufficient income for the individual participants of Burayu MSE operators?
- ii. Is there any health's problem that affects the workers due to the cobblestone work in Burayu Town? and
- iii. Is the cobblestone work gender differing in employment generation and income earning?

These questions are going to be assessed and answered in this research thesis.

1.4 Objectives of the study

1.4.1. General Objective

The general objective of the study is to analyze the socio-economic significance of cobblestone work to curb urban unemployment and its gender based employment absorption of the work in the Town.

1.4.2. Specific objectives

The specific objectives of the study are:

- i. To analyze the socio-economic significance of cobblestone work in urban unemployment problem solving in the Town;
- ii. To investigate the employment generation characteristic of the work across gender;



- iii. To identify whether there is health problems that are associated with cobblestone work during chiseling and paving; and
- iv. To draw lessons for the policy implication of the Region.

1.5 Significance of the study

Infrastructural development is a backbone of the country economy to realize sustainable development. It contributes to attract the investors and makes the society direct benefit in reducing transportation costs, production cost and speeding up of the production process and facilitates marketing facilities. The study mainly focuses on the socio-economic significance of the cobblestone work to curb urban problems and its sustainability in the study town. The number of operators of MSE in cobblestone work is diminishing over time. Data from MSE agency of the town shows that in 2008/09 or 2001 Ethiopian fiscal year, the number of cobblestone workers were 1184. But in December 2011, this number is decreased to 550 which are only about 46.5%. The reason why the number of operators decreased is not studied. It is the researcher interest to find out the root cause of the socio-economic problems that are associated with the cobblestone works.

Therefore, the study of socio-economic significance of cobblestone work provides the urban government to see its main problems of the MSEs employment generating activities from different perspectives. So that the strength will appreciated to develop and look for the strategies to improve the weakness. Moreover, other interested individuals, scholars and officials may use it for further research on decision making purposes and policy formulation.

1.6 Delimitation of the study

The study takes place in Burayu Town of the existing three kebeles. It is designed to examine the socio-economic significance of the cobblestone work to curb urban problems. Such urban problems are mainly poverty and unemployment. It assesses the causes of urban problems and the ways in which the problems are solved. Employment generating capacity of the cobblestone work from social and economic point of views is analyzed. In addition, it assesses the income generating capacity of the cobblestone workers to the individual operators and its contribution to the economic and social well being of the society at large. In this study, other satellite towns or kebels are not included. The data also constitutes the period from 2001 to 2004 Ethiopian fiscal years.

1.7 Limitation of the study

The study is geographically limited to Burayu Town and focused on the socio economic significance of cobblestone work to curb urban problems. Thus urban problems are mainly poverty and unemployment. But urban problems are not only these; for the sake of this paper these two are assessed. In addition to financial and time limitation, the study was constrained to the following points.

- There was no prior study in the Burayu Town regarding to socio economic significance of the MSEs to serve as a fertile ground for this study.
- Lack of organized and reliable secondary source of data in the town due to the absence of proper documentation system.
- Lack of willingness of some respondents to give required information truthfully.
- Absenteeism and higher rate of turnover of the officials and the experts in the town due to different reasons. Due to these reasons, this research paper is limited to explain everything in the town.

1.8 Organization of the Paper

The paper has constitutes with five chapters, which explain the issues under each chapter of main topics. The first chapter presents introduction part of the study which consists of background of the study, statement of the problem, objectives, significances, limitation and delimitation of the study.

The second chapter presents reviews of the related literature that are contributing significant role in aggravating urban problems in cities of developing countries and specifically in Ethiopia and conceptual framework. Chapter three presents the methodology of the study and describes the study areas. The forth chapter deals with the discussion and the analysis of the data. The final part is chapter five, and it summarizes the major findings of the study, draws conclusions made from the findings and the recommendations that are important for policy implications suggested by the researcher.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

Reviews of the literature provide us the foundation that informs and refines a research objective, and provides a benchmark against which a researcher can compare and contrast against the results. Accordingly, this chapter presents some concepts on urban problems of the developing countries in social and economic dimensions. These urban problems are assessed in details and find out systematic approaches to solve these problems. Improving employment generation capacities of different works that contribute to poverty alleviation and income increasing for the individuals are summarized. Therefore, different related and relevant points from books, journals, official reports and internet have been reviewed to establish convincing arguments about the issue being under study. Moreover, previous study reports about the socio-economic performances and improvements methods are referred and summarized.

2.2 Definition of terms

The term *cobble* is a geological term used to describe a stone of a particular size, which is approximately two and a half to ten inches (.64 to 256 millimeters). Colors range from grey to black to purple, depending on the origin of the stone. Patterns in cobblestone streets depend on the creativity of the workers who designed the streets and installed the cobblestones¹ (<http://www.crusherspareparts.com>).

Encyclopedia defines the term cobblestones as a stones that were frequently used in the pavement of early streets. The word cobblestone is derived from the very old English word "cob", which had a wide range of meanings, one of which was "rounded lump"

with overtones of large size. "Cobble", which appeared in the 15th century, simply added the diminutive suffix "le" to "cob", and meant a small stone rounded by the flow of water; essentially, a large pebble. It was these smooth "cobblestones", gathered from stream beds that paved the first "cobblestone" streets² (<http://www.Wikipedia>, navigation the free encyclopedia).

In addition to that, The Advanced Learner's Dictionary of the Current English (1956) defines the term cobblestone as a stone worn round and smooth by water and used for paving, and pave with these stones or put together roughly.

Literature indicates that, cobblestones are made from highly durable stones, usually granite or basalt. They were usually dug from nearby areas and then cobbled, or roughly shaped into the size needed. The cobblestones were then set in sand or mortar. Sand allows the road to gently give to traffic, preventing the cracking associated with pavement or asphalt (<http://www.Wisegeek.com>). Streets paved with cobblestones have proven their durability and longevity by showing up through worn out sections of paved roads throughout the world (<http://www.crusherspareparts.com>).

Cobblestone works include the preparation of the cobblestone for manageable and useable size for construction purpose, loading, transporting and construction of roads and sidewalks or pavements along the side of a road for footway and pedestrian with different colors and attractive designs. Cobblestone works are labour intensive one and it generates employment opportunity for unemployed peoples. Therefore, it has significant roles and has an advantageous to developing country urban centers where the unemployment rate constitutes a higher proportion.

2.3. Causes of Urban Unemployment in Cities of Developing Countries

The rapid population growth during the period of 1970s and 1980s has created large number of young populations in most developing countries which has been reached the labor force age of this period and looking for employments and different urban services. The economic development of cities of these developing countries, however, has not achieved the capacity to supply the required services and job opportunity (Rakodi, 1997).

The rapid growth of urban population in developing cities has its own implications for the infrastructure and services needed in the cities. The failure to expand water supplies, sanitation systems, housing supplies and transportation to match with the growth of population has been the main cause of misery life in the cities of developing world. In many urban areas of the third world, growths of cities are irregular, uncontrolled and often resulting in the growth of squatter settlements (Wubshet cited in Girma, 2011). This rapid urban growth in developing countries has created major socio-economic and physical problems. Such problems are increasing the incidence of urban poverty, inadequate transportation, underdeveloped institutions and poor infrastructure (Cheema, 1993).

Infrastructure and services deficiencies and environmental degradation have also worsened urban environment according to the writer. The speed of the changes has stretched the capacity of governments, local governments in particular, to keep up infrastructure and municipal services (Emiel Wegelin). According to the World Bank's Report of (2000b), urban problems are aggravated and it was stated like this:

"Of the total urban population, at least 600 million people are poor, already living in health and life-threatening situations in decaying urban environments.

One third of the city dwellers are living in substandard housing. At least 250

million urban residents have no ready access to safe, piped water, and 400 million do not have adequate sanitation”.

Without an appropriate response for these, rapid urban population growth it is likely to aggravate the often mutually reinforcing effects of poverty and environmental damage.

In addition to these, World Bank (2008) stated that the governments of developing countries are not able to provide sufficient public services. Such public service provisions are either in a poor performance or non existence in the level of needed quality. Due to these reasons developing countries have faced poor public infrastructure services, highest rates of unemployment and most of them are under chronic poverty.

2.3.1 Underdeveloped Infrastructure

Management and maintenance of major infrastructure systems includes roads, transport, water, sewerage and drainage, communication and delivery of energy which requires significant allocation of funds and can remain on service for longer periods of times. Local government planning schemes should consider the provision for infrastructure contributions to be levied from developers under taking projects (World Bank 1994).

According to, Jim Amos (cited in Devas & Rakodi 1996) urban infrastructure services are categorized into three areas. Such as: physical infrastructure, Social Infrastructure and Entrepreneurial Infrastructure.

- i. ***Physical Infrastructure.*** Physical infrastructure provision includes water, sanitation, road and electricity services. These services are highly interdependent in the process of urban development, even though managed by an independent body. These services require huge investment and significant amount of operating costs and thus need coordination of efforts through town planning, to achieve efficiency and effectiveness.

Due to these reasons, the managers of urban government in the developing countries need huge capital to finance such physical investments to realize urban development.

- ii. ***Social Infrastructure.*** Social infrastructure includes such services as education, health, recreational and cultural facilities. Its main difference from physical infrastructure is that the social infrastructure meets the individual and personal needs present in a community whereas the physical infrastructure meets generalized impersonal basic needs of a community for non-exclusive services such as water, power, sanitation and so on.

The central problem in provision of social services in the cities of developing countries, particularly education and health, is that operating costs will create greater financial burden than the capital investment costs. The emotional construction of schools and medical centers without considering subsequent operating costs will have twofold effects. Even if there is sufficient fund, qualified personnel might not be available for recruitment to run the facilities effectively.

- iii. ***Entrepreneurial Infrastructure.*** Entrepreneurial infrastructures are related to services and facilities which constitute and determine the realization of economic transaction in urban areas. It comprises banking and financial services, legal and other professional services, maintenance and repair services which supports economic activities such as industry, commerce, housing developers and so on.

The authorities are unable to employ appropriate staff and to meet the cost of materials, equipments, building operations and etc, due to the insufficiency of fund. Therefore, the absence of and inadequate existence of these infrastructures in the cities of developing countries are an indicators of the existence of urban unemployment.

According to Todaro and Smith (2009), in Cairo of Egypt, out of 10 million people only 2 million peoples have access of clean water and sanitation system. 60% of the city was slums and squatter settlement in 1983, while the figure is increased to 79% for Addis Ababa. The percentage of slum and squatter settlement in Casablanca of Morocco, Calcutta of India and Ankara of Turkey were 70%, 67% and 60% respectively.

Large numbers of cities are left without adequate shelter and without access of safe water or sanitation. The haphazard patterns of urban growth have caused economic inefficiency, environmental degradation and human misery (Devas & Rakodi, 1992). Over the years, city planners and managers have made attempts to bring the situation under control, but with few exceptions their efforts have proved totally inadequate (Todaro and Smith, 2009).

Therefore, the provision of public goods like piped water, sewerage, street light and solid waste disposal are expected to be supplied by urban government. These can be the source of employment opportunities. The majorities of urban services have its own institutional arrangement, which can follow, control, provide and manage. Here most of the developing countries are unable to finance and provide it due to rapid urban growth. Participation of the local community in the local economic development helps to provide such services and make the community to realize social well being of the society rather than waiting on public sector grants (Helmising, 1997).

2.3.2 Uncontrolled Population pressure

The sources of rapid urban population growths are natural growth rate, net-migration and reclassification (NUPI, 2003). Net migration is considered to be the major factor for the commonly high rate of urbanization, which is fuelled by a high level of rural-urban

migration. Migration of the rural to urban is due to two factors, push and pull factors. The push factors are basically poverty driven and have their roots in the deterioration of the resource balance in the rural areas, and hence in the diminishing of the per capita ownership of cropping and grazing land as well as livestock (NUPI, 2003). The pull factors, on the other hand, related to the fact that urban areas are in general relatively better off than their rural comparable in terms of the availability of job opportunities and social services (ibid).

The socio-economic factor of migration creates congestion in the social and economic services of the urban dwellers (Devas & Rakodi, 1992). The availability of relatively better schools, health institutions and urban facilities attracts (pull factors) to advance their educations sufficiently & to gain access to promising careers in public administration in a major and facilitated companies.

When there is unbalanced growth between the rural and the urban, over migration is resulted. This kind of population growth and accelerated rural-urban migrations are mainly responsible for the explosion in urban shantytowns. But some writers are blaming those of developing countries government (Todaro and Smith, 2003). These blames are rest up on the policies of the developing countries government followed. According to the writer's explanation, due to misguided policies of the government, 80% to 90% of new urban housing is illegal in the developing countries during the late 1980s. Therefore, the critical issue that needs to be addressed (according to the authors), is the extent to which national governments can formulate development policies that can have a definite impact on the trend in urban population growth.

The impact of over rural-urban migration is not only congestion of urban services but also aggravating urban unemployment and poverty. With a population estimated at 75 million, out of which 50% are below the age of 20, Ethiopia is bound to face considerable youth unemployment and under-employment both in the rural and urban areas. Though it is difficult to accurately estimate the magnitude of irregular migration, there are some assessments and research that show the huge increase in migration in and from Ethiopia, in particular by the youth (UN, 2011).

2.4 Urban problems in Ethiopia

The level of urbanization was only 3 per cent at the end of World War II, which increased to 6 per cent in 1960, 11 per cent in 1984 and 14 per cent in 1994, which is estimated to have already reached 16 per cent in 2003 and projected to account for 20 per cent of the total population in the year 2020 (NUPI, 2003).

The fast and the rapid growth of urbanization (4.34%), Ethiopia causes multitude problems. The major problems of Ethiopian urban centers includes: poor housing and squatter settlement; weak and fragile local economic basis; high rate of unemployment and ever-increasing level of poverty; a crowd of social problems including crime and juvenile delinquency; an ever deteriorating environmental conditions; serious shortage and limited coverage of basic infrastructure and services; and weak institutional and financial capacity to deal with these problems (NUPI, 2003). In general, the high rate of urbanization has created powerful pressure on the already weak capacity of urban centers to offer job opportunities and basic infrastructure and services.

2.4.1 Urban Development and the municipal services

Ethiopia is pre dominantly an agrarian economy, with 84% of the national population living in rural areas. At the beginning of 1960s urbanization rate in Ethiopia was 6% (NUPI, 2003). According to the 2007 CSA report the country has a total population of 73,918, 505 out of which 16% constituted the urban population.

The major factors contributing for urban population growth in Ethiopia includes higher natural growth rate, and increment due to rural to urban migration. Such population pressure in urban area challenges municipal administrations to provide adequate services and enhance local economic development. However, currently municipalities and city government could not handle in a meaningful extent with the major urban service demands and population growth. In the areas of urban management, these problems have been aggravated due to the following major reasons. Rules and regulations that govern the performances of municipalities are not yet clearly defined. These are lack of clear autonomy and freedom, weak organization and management, shortage of skilled and technical man power (Shewaye and Alemayehu cited in *Takele, 2007*).

The constitution of the Federal Democratic Republic of Ethiopia /FDRE/ has introduced a decentralized administrative system with the emergence of national regional states (proclamation No 1/1995). The proclamation has given local governments the right to administer their own affairs. The constitution, however, does not explicitly indicate the status of municipalities in government structures. In the constitution, recognition is given to regional, zonal, woreda and Kebele administrative hierarchies, but not for the urban governments. Now, the approval of appropriate municipal legislation rests on the existing situation of each region.

2.4.2. Gender and Urban poverty

According to Meron (2005), the extent of poverty appears differently among the various groups of society. It affects peoples of different characteristics in various ways. They have distinctive roles, needs and constraints so that assessing urban livelihoods from gender perspective is very crucial.

Urbanization tends to affect gender roles, relations and inequalities since the factors responsible for female-headed household formation arise through urbanization. This is evident in the transformation of household structures, the shifts in household survival strategies and changing patterns of employment (Chant, cited by UNCHS, 1996).

In the absence of good gender-disaggregated data, there has been a tendency to rely on comparisons between male and female-headed households in order to examine gender and poverty in urban areas (United Nations, 2000). However, this does not necessarily an indicator of the increase in the absolute number of women living in poverty.

There is now a considerable body of evidence on the relative income levels, household structures and work patterns of male versus female-headed households. There is some evidence of a link between female headship and poverty. Female-headed households are a heterogeneous category and may include relatively well-off women. Different sub-groups are more likely to be vulnerable to poverty than others. The characteristics of these sub-groups vary considerably between contexts depending on a number of factors, including the extent of social support available and the degree of social legitimacy accorded to different types of female-headed households (Chant and Millwaine, 1995). They may face greater difficulties than men in gaining access to labour markets,

credit, housing and basic services, and there are sometimes additional layers of discrimination against female heads.

More detailed and systematic data are required on work hours, income sources, expenditure patterns, assets and claims of different types of household, both male and female-headed. According to World Bank cited in Abebawu (2005), poverty is not gender free. It has been shown that there is a difference between men and women in access to and control over land, credit technology, education and health. Women's inequality in household decision making and community and public participation is a well documented event.

Women are more likely to be poor and half-starved and less likely to receive health services, clean water, sanitation or other benefits. These problems are attributed to the prevalence of female-headed household, their lower capacity to earn income and limited access to education, formal employment and social security (*Takele, 2007*). Moreover, in terms of advantages or deprivation, complex poor households lack access to material, human, social and cultural recourse; provide insufficient outputs; lack of sufficient income and access to services; inadequate consumption of goods and services functioning failures for household members; and personal suffering from health problems (*ibid*).

In addition, it was revealed that female-headed households are mainly engaged in informal sectors and paid domestic works while the male headed households are engaged in somewhat better works compared to those females. This implies that there is a need to increase an income of female-headed households to increase their consumption expenditure. However, other indicators of welfare should be considered. The differences in income or consumption and the existence of different poverty levels among male and

female-headed households accounted for by unequal opportunities to get the same level of education, the type of occupation of the household heads and partly due to the difference in the number of household size.

2.5 Urban Problem Solving Strategies

2.5.1 Organizing MSEs

Organizing unemployed people into micro and small enterprise development is one of the strategies utilized to alleviating poverty. It provides self help employment opportunity to the poor people in developing countries (Tegegne and Meheret, 2011). The development intervention approach at various levels embraced micro enterprises as a key instrument to improve the livelihoods of the poor (ibid).

The major objectives of MSE development strategy in the urban development program are the reduction of poverty and unemployment. It is also to foster the rural urban linkages (Tegegne and Meheret, 2011). The employment generation of MSE is not only for the operators but also for the hired labourers. This clearly indicates that the importance of MSE sector is significant in fighting against urban poverty and unemployment. Most of the MSE operators are the youth, which is an indication of the importance of the sector for promoting youth employment (ibid).

The contribution of MSEs to the local economic base would be enhanced through the creation of clustering. A cluster can be defined as 'a spatial concentration of enterprises with a varying degree of inter-firm cooperation, generating some or substantial external effects' (Dijk, 2000). Clustering enables small firms to gain economies of scale, capacity, flexibility, and specialization thereby allowing them to become as competitive as larger firms, domestically or in global markets.

The sector is characterized by highly diversified activities which can create job opportunities for a considerable section of the population. This indicates that the sector is a fast medication for unemployment problems. Enabling to employment generation, facilitating the environment for new job seekers and creation of self-employment opportunities are the direct intervention of the government in supporting the MSEs. The support for MSEs has to include skill upgrading programs for MSE operators and strengthening the use of appropriate modern technologies that boost their capacity to create long term jobs (MTIT, 1997).

2.5.2 Urban Micro and Small Enterprise Strategies

Urban development got an attention following the poverty reduction strategic program (PRSP) of the government. The plan was followed by the plan for Accelerated and Sustainable Development to End Poverty (PASDEP). The PASDEP was summarized the urban development policy's as the major components to address the problem of the urban areas in the country (Tegegne, 2007). In terms of urban development, the strategy indicates that there is a need to focus on urban poverty and welfare as much as on enhancing the contribution of urban centers for national development (MoFED 2006). The national urban development policy has two main packages: the urban development package and the urban good governance package.

The urban development package has a number of inter related objectives, including reducing unemployment and poverty; improving the capacity of the construction industry; alleviating the existing housing problems; promoting urban areas as engines of economic growth and improving urban social and economic infrastructure, particularly

for the youth (Tegege, 2007). According to the writer, urban development package has five pillars. Such as:

- Micro and small enterprise development program;
- integrated housing development program;
- youth development program;
- provision of land, infrastructure, service and facilities; and
- Rural-urban and urban-urban linkages.

The MSE program of the national urban development policy aims at creating job opportunities for 1.5 million unemployed residents through the establishment of MSE extension workers, provision of premise and loan, business development services, promoting market opportunities and market linkages and equipping enterprises with modern equipment and machineries (MoWUD, 2007).

According to Wolday, (2000) the prioritizing and supporting Micro and Small Enterprises Development is based on the strategies used to addresses the problems and creates an enabling environment for the growth of those enterprises. It is believed that the following points shall be the main standard for prioritizing the target of MSEs. The prioritizing program may think about those micro and small enterprises using:

- MSEs which are based on local raw materials and/or labour-intensive and local resource based,
- MSEs which have greater intra-and inter-sectoral linkages, particularly those having higher linkages with agriculture,
- MSEs which are engaged in import substitution and with a potential for export, and
- MSEs engaged in activities that facilitate and promote tourism, etc.

In addition to that, Wolday stated that the support program also focuses on the specific condition and potential of the regions. Such as:

- creating and an enabling legal framework;
- reforming those existing regulatory conditions;
- facilitating access to finance;
- training in entrepreneurship, technical and management skills;
- facilitating access to market, raw materials and fostering partnership; and
- facilitating the availability and access to adequate infrastructure.

The Micro and Small Enterprises sector is described as the national home of entrepreneurship. It provides the ideal environment enabling entrepreneurs to exercise their talents to the full and to attain their goals. In all the successful economies, MSEs are seen as an essential facilitator for growth, job creation and social progress at large (MTIT, 1997).

2.5.3 Opportunities for MSE Development

As National Urban Development Program (2004) stated, the policy of MSEs are clearly states that the way in which micro and small enterprises flourishes in urban centers to create massive job opportunity to alleviate poverty. The existence of good national policy to support the MSEs is a good opportunity for the establishment of small and micro enterprises. The small business sector is seen as an important force to generate employment and more equitable income distribution, to activate competition, exploit large market areas, enhance productivity and technical change, and through all of these stimulate economic development (NUDP, 2004).

The importance of large industrial and other enterprises for the growth of the Ethiopian economy cannot be denied, but there is a significant number of evidence that the labour absorption capacity of the small business sector is high, the average capital cost per job created is usually lower than in the big business and its role in technical and other innovation activities is crucial for many of the challenges facing our country (MTIT, 1997).

Even in the developed country like U.S. economy, Birch (1979, 1981) cited in Neumark, Wall, and Zhang, (2008), small businesses have a great role in employment generation. The first evidence in support of the argument is that small businesses are the primary engines of the job growth in the USA. It was claimed that 66% of all new jobs in the United States during 1969-1976 were created by firms with 20 or fewer employees and 81.5% were created by firms with 100 or fewer employees. Later, Birch (1987) argued that during the period 1981-1985, firms with fewer than 20 employees accounted for 82% of employment growth via expansion and contraction of the existing firms (ibid). This can be clearly shown us that in any economic system and level of the economy, the importance of MSE and its contribution in employment generation are significant.

2.5.4 Constraints facing the MSE sector

Given the rapid urban population growth due to migration and natural growth, the formal sector does not able to absorb in employment. MSEs have become important urban economic activities and provider of urban employment (Elias, 2005). Macharia (cited in Elias, 2005) also argue that the informal sector is more common to Sub Saharan Africa (SSA) than the formal sector. In the African context, local economic development program cannot able to ignoring MSEs' role in the network of business for development.

The policy relevance of MSEs, particularly small industries, may come under two major points (van der Loop cited in Elias, 2005): the potential for employment creation, and MSEs' competition with large enterprises, and even in the global markets through clustering. Therefore, giving an emphasis on the MSEs and strengthening them in the developing countries can make them competent and the source of employment for many of unemployed people in the urban area.

In Ethiopian situation, MSEs have been confronted by various problems for a long period of time which are of policy, structural and institutional in nature (MTIT, 1997). According to (MTIT, 1997), the constraints are related among others, to the legal and regulatory environments, access to markets, finance, business information, business premises, the acquisition of skills and managerial expertise, access to appropriate technology, access to quality business infrastructure, and, in some cases discriminatory regulatory practices. In addition to these, lack of smooth supply of raw materials and lack of working premises were the major bottlenecks for small scale manufacturing industries to expand their activities. On the other hand, lack of sufficient capital and working premises were the leading problems facing the informal sector operators not to get bigger their businesses.

Brown et al. (cited in Neumark, Wall, and Zhang, 2008), argue that jobs created by small firms are less desirable because they tend to exist for a shorter period of time, pay lower wages, and have less generous fringe benefits in terms of health insurance, vacation, and pension plans. In addition, they argue that small firms tend to have poorer working conditions, provide less job training, and have higher job turnover rates. Based on these findings, they recommend that policymakers should be watchful about

encouraging policies to help small firms. Even though the argument of Brown et al. is an important one, it is not the focus of the researcher.

Although the economic policy of the developing country paid due emphasis for entrepreneurship values and appreciation of the sector's contribution to the economy, there are still constraints related to infrastructure, credit, working site, extension service, consultancy, information provision, model development, imbalance preferential treatment, and many others, which therefore need proper attention (NUDP, 2004).

2.6 Socio-Economic Contributions of Cobblestone work

The social and economic contributions of cobblestone road construction in the local area have been analyzed in different perspectives. GTZ or GIZ was analyzed in views of social, economic, political and infrastructure developments and the number of employment creation (GTZ, 2011). It is confirmed by the assessment of ULGDP (2011) that the land value of the plots of the area and often of the entire region has raised. The businesses activities are increased alongside paved roads and create higher income to residents and generate increased revenues for the city administrations as well. Road networks are also improved where cobblestone roads are implemented. Pedestrians also benefited from cobblestone sideways particularly in the study areas¹.

Cobblestone roads have also enhanced the environmental quality of cities by creating less dusty environment typically noted in GTZs' assessment areas where the prevailing wind is very high (ULGDP, 2011). According to Adama City Administration (cited in Adem, 2011) adoption of cobblestone pavement is not only creating the employment opportunities, but also anticipated to reduce the costs of road infrastructure.

1. The study area is to indicate that the area where cobblestone road construction was undertaken and assessment drawn from five regional states for the year of 2011

Material production cost for indigenous products based entirely on local raw materials, where as conventional materials are produced abroad and imported with a foreign currency. According to Adama City Administration (cited in Adem, 2011), materials, equipments, tools and facilities for extracting and refining asphalt is too expensive and complex that depends on technology whereas local materials like cobblestone utilizations are the indigenous inputs and efforts fully.

2.6.1 Economic Contributions

As cobblestone road construction is labor-intensive one, it creates wide job opportunities in quarrying, chiseling, transporting, paving and tool production. The assessment undertaken by (ULGDP, 2011) has proved that employment in cobblestone road constructions largely targets on the unemployed young people, women and other marginalized groups.

Considering the data obtained by ULGDP (2011) from local MSE offices, during the last three Ethiopian Fiscal Years (2001-2003), more than 37,000 Ethiopians have found work in the cobblestone road construction sector development implemented in assessed nine cities². This can be enabling to support the livelihood of more than 165,000 persons and thus the project reduces urban poverty and contributes to efforts in attaining the MDG Goal (ULGDP, 2011). The income generating activities of cobblestone work targeting at unemployed peoples in both sexes. In those cities, women accounts for about 39% out of the total persons employed in cobblestone sector in the assessment cities.

In addition to that, maintaining streets pavement with cobblestones are cheaper than maintaining road of asphalt or wood (Mark, 2006). The annual maintenance activities of gravel road include on the subject of designing proper drainage system, reshaping to

2. The nine cities that assessments have been conducted are: Adama, Arba Minch, Axum, Bahir Dar, Bishoftu, Dessie, Harar, Hawassa and Mekelle.

assure the uniformity of road lane, and using additional gravels, that costs higher while asphalt road maintenance is lower than gravel because, there are no needs of using additional gravel, even though the initial construction cost are higher (Charles et al cited in Adem, 2011). But cobblestone road is too simple to maintain and needs manual tools for operations, and thus it incurs lower construction and maintenance cost.

2.6.2 Social Contributions

The construction of cobblestone roads improves both motorized and non motorized mobility of the neighborhood localities. Public and private transport, ambulance, solid and liquid waste removal service can access the way to the local population (ULGDP, 2011). The provision of sidewalk has contributed greatly to the reduction of traffic accidents on the main road.

According to ULGDP (2011) cobblestone road construction has also greatly benefitted the urban population in terms of mobility, flood-reduction, neighborhood renewal, increased business opportunity, employment creation and ultimately has contributed to urban poverty reduction.

According to European Commission (cited in Adem 2011), utilizing local resources provide three basic advantages for local community; offering new job opportunities, fulfilling the desire of new entrepreneurs and contributions for local economic, social and environmental renewal. Ultimately, local economic development can be achieved through active mobilizations of local resources, strengthening community and key stakeholders participation, and developing indigenous capacities (World Bank, 2008).

GTZ or GIZ (2009) indicated that the social importance of cobblestone sector for Ethiopian on the title of 'The Cobblestone Sector Guide for Ethiopian Cities' as;

Cobblestones work meets Ethiopia's road need due to the provision of cobblestone pavement in the inner cities. This cobblestone road has a special characteristic. It is:

- *labour-intensive one and creating jobs and opportunities for construction entrepreneurs,*
- *uses natural and local materials and does not require imported machinery,*
- *boosts the local economy with investment going to local economic development,*
- *does not depend on imported oil, as asphalt does,*
- *cost-effective compared to concrete or asphalt roads,*
- *empowers cities to develop their own infrastructure and construction sectors,*
- *makes towns and cities more beautiful, benefiting residents and encouraging tourism, and*
- *easy to maintain and has a much longer lifespan than asphalt roads' (GTZ, 2009).*

Due to these reasons (according to the writer), cobblestone road is advisable to the Ethiopian context and is very important to expand road infrastructure and employment generating activities based on local resources in the poverty reduction program.

2.6.3 Employment Contributions

As it indicated above, cobblestone road construction is labor-intensive one; it creates wide job opportunities in quarrying, chiseling, transporting, paving and tools production. Earlier studies (Cobble Stone Project Ethiopia, Project Handover, GIZ, 2009) have identified 140 cities in Ethiopia using the technology providing 90,624 jobs that have

produced more than 1.23 million square meters of cobblestone pavement. The study reveals that every constructed square meter of cobblestone road creates approximately 2.6 labor-days. Furthermore, it is stated that employment-generation largely benefits unemployed young people, whereas women share is more than 38% at average (ULGDP, 2011). Therefore, the development of the cobblestone sector has greatly contributed to reduce urban poverty; while benefiting the most vulnerable – poor unemployed and woman. However, the sustainability of the sector greatly depends on public investments. Based on the assessment of (ULGDP, 2011) it is noted that community participation and the private sectors show little interest and support to sustain or invest in the cobblestone sector. Therefore it is recommended by the author as:

- reduce the unit costs through further enhancement of competition during the bidding process,
- enhance the quality through adapting the quality control mechanism of the administration, and
- rise awareness and provide incentives, such as unsealing courtyard, public recognitions and promotional material.

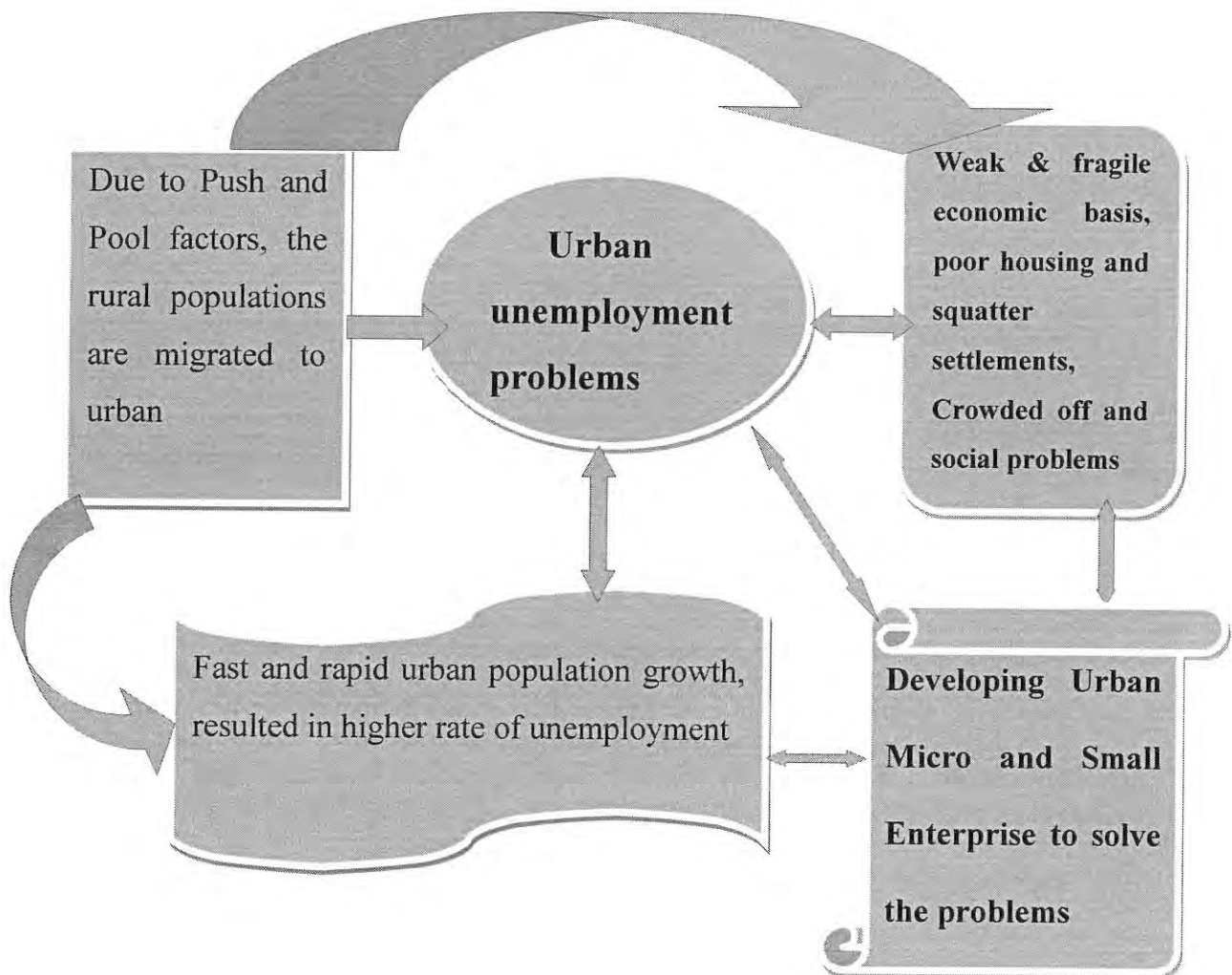
In general, cobblestone work has social, economical and environmental impact on the base of development of road infrastructure. Maintaining streets pavement with cobblestones are cheaper than maintaining road of asphalt or wood (Mark, 2006). Material production cost for indigenous products based entirely on local raw materials, where as asphalt road raw materials are produced abroad and imported with a foreign currency and make it expensive.

2.7 Conceptual framework

For cities to play their roles in socio economic development aspects, adequate planning and proper managements of urbanizations are required (Okonyo cited in Girma, 2011). Inadequate managing the urban expansion and population pressure resulted in different urban problems. The urban problems in cities of developing countries are the failure to government's services provision to meet the basic needs of the urban societies. The fast and the rapid population growth and urbanization in developing countries are caused multitude problems. The major problems includes: poor housing and squatter settlement; weak and fragile local economic basis; high rate of unemployment and ever increasing of poverty; a crowd of social problems including crime and juvenile delinquency; an ever deteriorating environmental conditions; serious shortage and limited coverage of basic infrastructure and services; and weak institutional and financial capacity to deal with these problems (NUPI, 2003).

To curb urban problems means finding out the solution or solving the exiting problems in the urban areas. Most of urban problems can be solved through employment generations and income earning. The role of the MSE sector and its potential contribution to the country's economic development are recognized in employment generation. The socio economic development of Micro and Small Enterprise sector is becoming a subject of national importance. Micro and Small business of Cobblestone works are also one of the indigenus which is based on locally available materials for road construction technologies implemented as an option to other types of road construction technologies in the city. It is labour intensive and designated as priority sector for the government, in terms of employment generation and poverty reduction.

The supporting strategies are also designed to prioritizing import substitution policy implications and direct support of export diversifications.



Therefore, local government of Burayu Town has to play a significant role in realizing socio economic development of the town through proper planning and managing the urban growth and infrastructure development to curb urban problems. It is possible to

create conducive environment for investment expansion and employment generation schemes to reduce unemployment rate and urban poverty. Otherwise, uncontrolled population pressure and inadequate employment generation resulted in aggravating urban problems. Moreover, under developed institutional, administrative and financial capacity to cope up with the urban growth is resulted in deteriorating the living standards of the society.

The gravity of urban unemployment problems exacerbated by the rural-urban migration and it cannot be solved in the short run, since a growing pool of unemployment and the consequent spread of poverty would pose serious threats to the stability of the sociopolitical and economic systems of developing countries.

CHAPTER THREE: METHODOLOGY AND DESCRIPTION OF THE STUDY AREA

3.1 Methodology of the study

Descriptive and survey methods are used in the course of the research. A survey method is used to obtain the quantitative data that are collected from the targeted groups and descriptive analysis is used to describe the data obtained from the key informants. Questionnaires are used to collect quantitative data; while interviews and group discussions are used to collect qualitative data

3.1.1 Data source

The study makes use of both primary and secondary sources of data. The secondary source of data are gathered from the governmental offices of Burayu city administration and the primary data are from the key informants such as experts, workers, coordinators, and the implementers of the cobblestone work. Thus information is gathered through questionnaire, interview and group discussion are analyzed by employing descriptive statistical techniques.

3.1.2 Data gathering techniques and tools

To obtain and extract sufficient secondary source of data, the researcher intended to employ document analysis. Based on the understanding from these secondary sources and the literature analysis, the researcher designed questionnaires and list of questions for interview and group discussion to get in depth understanding of the work. The data gathering tools are Pilot-tested before the final study. Necessary corrections were made to improve the validity and the relevance of the instruments. This improved the rates of return and maximizes the quality of the responses. Respondents have pre-informed about

the objective of the study before each interview and questionnaire is given. Based on these tools both qualitative and quantitative data are collected by the researcher. In addition to that, the researcher moderates the focus group discussion and conduct an interview to obtain primary data and collect all the necessary information from secondary sources.

3.1.3 Sampling

The researcher employs different sampling techniques to select the participants. Purposive sampling technique is undertaken for those of the head of the office of MSE agency, construction experts and the coordinator of the small and micro enterprise cooperatives. The workers of the small & micro enterprises respondents are selected in probability sampling technique. Data from micro and small enterprise (MSE) agency of Burayu urban government (December, 2011) indicates that, there are about 318 MSE cooperatives available with 2364 operators and above 13 million Ethiopian Birr (ETB) of capital. From these cooperatives 81 MSEs are organized under cobblestone project with 550 operators (chiseling and paving). Out of these, 17 cooperatives (20%) are selected systematic random sampling technique (at 4 intervals level) and 50% of the members are selected randomly and filled the questionnaire. In this case there are about 85 questionnaires are filled (17 for coordinators and 68 for workers) which is about 15% of the total population and about 96% of the respondents answered properly. To increase the responding rate, the researcher co-worked with the Burayu Town administration micro and small enterprise agency and with the coordinators of the MSE enterprises.

3.1.4. Data analysis and presentation

Quantitative data obtained from the questionnaires are cross tabulated around the sub-topics related to the research questions and descriptive statistics are utilized. SPSS

statistical package program is used in the analysis of the data. Cross tabulation, pie chart and bar graphs are utilized in the presentation of the data. Narration and explanation of the information that gathered from those of the key informants in interview, open ended questionnaires and group discussions are discussed. Percentages are also used to indicate the extent of response and its frequency per each item.

3.1.5. Data gathering procedures and size

The town is clustered in to two parts. The newly expansion areas called Tatek and the existing kebeles where the cobblestone works are undertaking. For this study, only the existing three kebeles are included. In the procedures of data gathering, both probability and non probability sampling techniques are employed. Probability sampling which is known as systematic random sampling technique is utilized for the selection of 17 MSE cooperatives from the existing 81 and 50% of the selected MSE workers are randomly selected and are participated in filling the questionnaire. Purposive sampling technique (non-probability sampling technique) is also employed to select the existing three sample kebeles as well as heads of the offices and officers or experts of the MSE Agency in the urban government.

The target groups are pre-aware properly before they filled the questionnaire, interviewed and undertaken the group discussion. The researcher moderated the focus group discussion and interviewed the unstructured interview to obtain primary data and collected all the necessary information from secondary sources. Questionnaires are also filled by the individual operators of the cobblestone work.

Table 3.1 Summary of Sampling procedure and tools

S. No	Participants	sampling size	Sampling method	tools utilized
1	MSE cooperatives	17	Systematic random sampling	-----
2	Heads of micro and small enterprise at city and kebel levels of Burayu Town	3	Purposive sampling	Interview
3	Coordinators	17	Purposive sampling	Questionnaire
4	Workers of SME	68	Random sampling	Questionnaire
5	MSE agency workers/experts	5	Simple random sampling	Group discussion
6	Experts on the road construction	3	Purposive sampling	Interview

3.2 Description of the Study Area

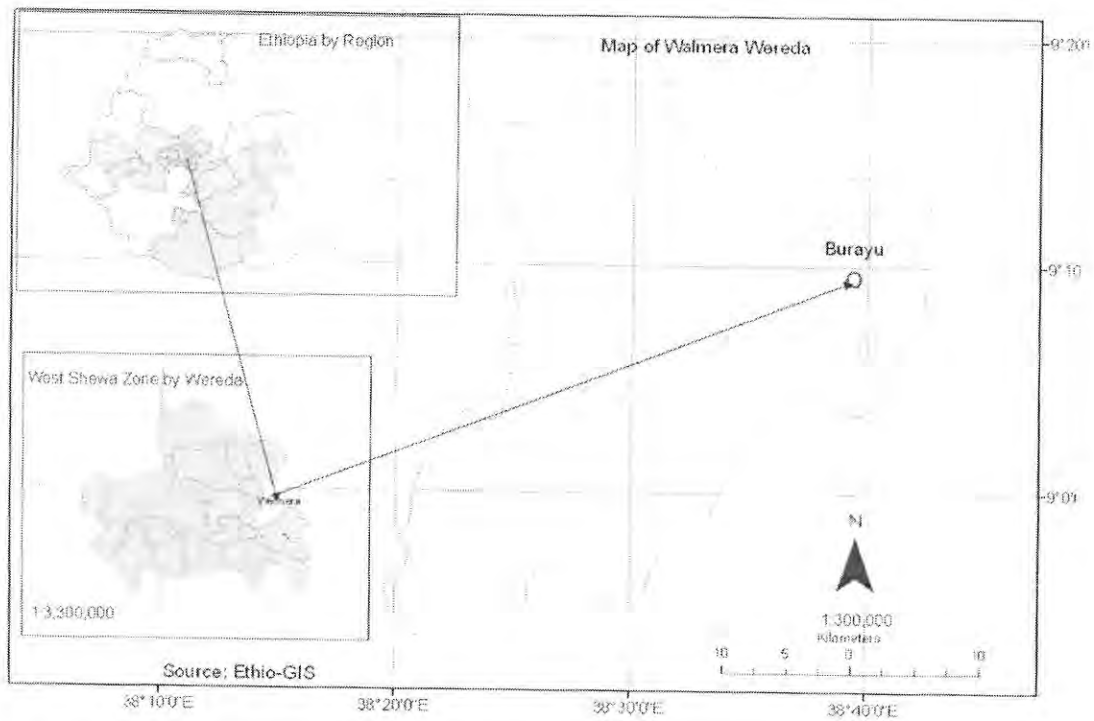
3.2.1 Location

Burayu Town is located in the western of Addis Ababa, along with the Ambo road. It is about 15 km away from the center of Addis Ababa (Piazza) and ranged to Menagesha Town of wolmera woreda. The town has six kebeles, with the existing three kebeles under urban administration and the newly expansion areas of the three peasant associations.

The existing built up area of the town and the area under the master plan which is excluding Gefersa Guje (the peasant associations which is recently incorporated in to the town) is calculated to be 6,361 hectare (Annual Report, 2011).

The Integrated Development Plan (IDP) of Burayu Town (2006) stated that Burayu Town astronomically extends roughly from $9^{\circ}02'$ to $9^{\circ}02'30''$ N latitude and $38^{\circ}03'30''$ to $38^{\circ}41'30''$ E longitudes. It is bounded by Addis Ababa City in the east, Subba of Sebata forest in the south and Wolmera Woreda in the west and north. A third grade status was granted to Burayu Town in 2005 of the new towns' reform program, and was administrated under Welmera Woreda of West Showa Zone. But currently, first grade city status has been granted since 2007 and is administered under Addis Ababa (Finfine) Zuria special zone of Oromia Regional State.

Figure 3.1 Location of the study area



Source: Ethio-GIS (cited in Girma, 2011).

3.2.2 Historical background

3.2.2.1 Naming

The name Burayu is derived from one of the indigenous trees of the region. The term “Burayu” is in “Afan Oromo” word which means “Tiqure Inchet” in Amharic and it is literally to mean black wood (IDP, 2006). The tree was very big and used as a shade and a break in journey for the people who were coming from different directions and a reference point for the passers-by Burayu. The name Burayu gained popularity and people began referring the whole locality as Burayu due to that tree.

3.2.2.2 Municipality Functions

Before the establishment of the municipality, the town passed through different kinds of administrative entities. During the Imperial era it used to be administered within the Menagesha Awraja of Showa province, without being given any status of a town administration. During the Derg regime Burayu was divided into two administrations: Burayu Peasants Association and Burayu Urban Dwellers Association. Since 1981 Burayu Peasants Association was changed to Burayu Special Administration. In 1996 the Municipality of Burayu town was established and its boundaries were covering the area between Ketta and Gefersa along the side way of the road. In 2005, the two administrations were unified and a municipal administration was established (IDP, 2006).

A partial plan was prepared for Burayu town in 1993 by the Urban Development Bureau of Oromia Region and the Integrated Development Plan (IDP) was in 2006.

3.2.3 Urban Planning

A partial plan that was prepared for Burayu Town in 1993 by the Urban Development Bureau of Oromia was incomplete. The plan focuses only on guiding the physical development of the town without giving adequate attention paid to the socio-economic and environmental problems. Moreover, the plan was not properly implemented. That is to say considerable mismatch exists between the proposals indicated on the plan and the reality on the ground (IDP. 2006).

The Integrated Development Plan prepared in 2006 was a strategic development plan for a five year period (2006-2011). The Integrated Development Plan was the principal strategic planning instrument which guides and informs all planning, budgeting, management and decision-making in the municipality. What differentiates the Integrated Development Plan from the previous plans is that it addresses socio-economic and environmental problems in addition to physical and spatial aspects. Moreover, it is prepared taking in to account the capacity of the municipality and with active participation of the various stakeholders during the various phases of Planning Process (IDP, 2006).

The existing built up area of the town was increased from time to time. It was about 623 hector, and it increased to 973 and now it is about 6,361 hector (IDP, 2006 and Annual Report, 2011).

The term urban planning is an essential idea that shows the future development features of the town. It results a different planning exercise made on the planning process. It can be originated from

- Identified and prioritized problems through public and stakeholder discussion;

- Identified problems and opportunities through sectoral studies and
- Town vision

The growth trend of the town proved that it has experienced both vertical and horizontal changes of urban development. The vertical growth was seen dominating the main road both in the left and right sides mainly starting from around the Bus terminal towards Addis Ababa direction and at Melka Gefersa areas. The horizontal growth and expansion of the town is associated with the major and recent housing developments observed widely around the newly expansion areas.

Town planning is the vital component of regional planning, therefore, in the process of preparing the structure plan of a town, the region and the surrounding area of the planning town should be considered. This is because the town is interconnected physically and with socio-economic and political matters hence considering these relationships contribute to identify important planning issues for the planning town.

3.2.3.1 The Existing Road Networks

Although roads are the vital component of a transport system, the coverage and quality of roads in the Burayu town remains very low. The annual report of Burayu Town indicate that, currently only about 35.2 k.ms of asphalt road (primary road) which is crossing the town from Addis Ababa to Ambo in two directions and the gravel surfaced estimated to be about 250 k.ms. The local roads that exist in the inner city are in limited parts of the town and are in a poor condition.

As it is identified, lack of roads (secondary, collector and local roads) is one of the critical problems of the residents of the town (Report, 2011). All of the existing local roads in the town are earth pushed with the exception of the main asphalt road and some

gravel surfaced road which are in poor condition. Out of the total land use, roads constituted only 13 percent which is very low when compared to the recommended figure 20-22 % of the total land use (IDP, 2006). Some of the roads proposed in the previous partial plan are not opened yet, while some of the opened have not been constructed. Moreover, the roads in the town are not hierarchically integrated. The lack of secondary roads has rendered difficult the linkage between the different parts of the town (ibid).

Almost all local roads in the existing built up areas are not properly designed in to two ways road as bigger cities and it is constructed as urban street. Therefore, it needs a lot to do. The cobblestone road construction in the town has expected to play a great role in the expansion of road network and as an import substitution in employment generating schemes.

3.2.3.2 Community participation

The fertile ground behind the development of cobblestone work is the existence of community participation. In Burayu Town, the kebele dwellers are organized in different teams, one of which is area development team. The team has its own committee. The committee is mobilizing the resource for developmental purpose from the residents.

Due to highly inflated global price of construction materials, it has become an extreme challenge to import and use foreign materials and technology to upgrade and extend the coverage of asphalt road networks (Adem, 2011). Therefore, seeking other alternatives that are significant and convenient to the local economic condition is needed for the realization of urban development problem solving strategies. Labour based technology provides economic efficiency (i.e. cost effective works involving optimal unskilled

workforces) and enhances the utilization of local resources, embraces huge jobs and job opportunities (Abebech, 2011) and promote local community participations for local development. Therefore, adoption of cobblestone side way and pavements reduces the costs of road infrastructure.

3.2.3.3 Transportation services

Urban transport planning and traffic management contribute to improve mobility and productivity of the labor. In addition, it uses - to achieve an efficient land use, to integrate transport network with public utilities and social infrastructure and to restructure the urban transport service. Transport efficiency has direct link with poverty alleviation (IDP 2006). The accessibility of the road transports more or less is dependent of the countries' resource and economic development level.

Taxis and city buses are providing a service in the intra-urban transport and along the main asphalted road. The horse-drawn carts provide regular service in areas where motorized transports are not available. This is mainly due to the absence of properly constructed roads. The absence of inter connected internal road network system make the society dependent of horse-drawn carts.

On an average day indicator, more than 4000 vehicles enter in to and exist from Addis Ababa through the town. This volume of traffic is expected to increase to more than 7,000 vehicles by year 2020 (ERA, cited in IDP 2006). Besides, the narrowness and twisting nature of the main road as well as roadside parking also contribute a lot for high traffic congestion especially during the morning and late afternoon. Although the opening of the new Kolfe-Menagesha road has contributed a lot in reducing the volume

of traffic in the town, efficient road network has to be designed and implemented to further alleviate the existing traffic congestion in the inner part of the town.

3.2.3.4 Existing Land Use

The existing land use classification of the total area within the municipal boundary has calculated to be 6,361 hectare (Annual Report, 2011). Out of the total built up area, agriculture and residence formed the largest proportion about 47% followed by investment 22.17% and infrastructure, which constituted nearly 21.35 percent of the total, built up area. Area occupied by social service related activities, grazing, forest, and manufacturing accounted for about 8 percent of the total built up area. Whereas areas under, commerce and open access constituted about 10 percent.

3.2.4 Socioeconomic situations of the town

For several reasons, the level of rural- urban linkage in the study area found to be weak. The subsistence orientation of the rural economy and the low development of manufacturing industries are among the major factors attributed to the weak rural-urban linkage. To strengthen the rural-urban socioeconomic linkage it is therefore, vital to strengthen social, physical and market infrastructure and promote off-farm activities and Micro Enterprises as well as resource based industrialization.

Data from Burayu town indicate that, there are about 2 health centers, 18 clinics; 3 health posts and 12 drug stores are available with private and governmental ownership. The total health coverage of the town is about 67%. This indicates that the service is not in a sufficient position to serve the urban dwellers. According to the standard sated, the health service needs much more to do.

In education services, there are about 32 kindergartens, 38 first cycle and 37 second cycle primary schools and one secondary and preparatory schools are available. In addition to these, there is one TVET institution and two colleges providing their services.

3.2.4.1 Population Pressure

During the period between 1984 and 1994, the population size of the town was growing on the average at 9 percent per annum. The growth rate has increased to 10 percent per annum during 1994-2002. The growth rate observed during 1984-2007 appears to be high when compared to the average annual growth rate of the urban population at national level which was 4.34% as of CSA 2007/08 report. This high growth rate is attributed to the fact that there were a large number of migrants who came to the town mainly to get plots for the construction of housing from the center Addis Ababa and from the rural boundaries.

In addition, the boundary of the town is extremely expanded and the former peasant associations are converted to urban areas. Here the patterns of urbanization are influenced by the ways in which the economy is organized and how the country interacts with the national economy. It is the closest city to Addis Ababa and used as transitory. Even though there is no accurate data showing that the percentages of the people who come from the rural areas to Burayu, the town is used as transitory too. This is because of socio economic factors i.e. social, cultural, language and administrative factors.

Cities provide different advantageous condition for capital flow, commercial and dissemination of tastes and consumer habits (Devas & Rakodi, 1992). It is also advantageous to provide employment opportunities, agglomeration economies and scale economies (Tegegne, 2009). Due to these reasons peoples are pulling to migrating in

need of better life. As urbanization is expanded in the town, infrastructures and urban services are not well developed yet.

Table 3.2 Population growth rate of the town (from 2002 to 2011)

Years	Number of people			Percentage change
	Male	Female	Total	
2002	7,350	7,724	15,574	–
2004	8,615	8,496	17,111	98.71
2007	31,504	32,369	63,873	273.28
2011	53,209	61,217	114,426	79.15

Source: CSA (2002, 2004 and 2007) and 2011 is from Annual Report of Burayu Municipality (2011)

Due to the horizontal expansion of the town and higher level of net migration from the center and the rural, the total number of population is estimated to be 114,426 (in 2011).

Table 3.3 Projected age composition of the population in 2011

Age groups	Total Population of the city in gender				Total population	
	Male		Female			
	Number	%	Number	%	Number	%
0-14	19,162	16.75	27,188	23.76	46,350	40.5
15-65	35,335	30.08	31,615	27.62	66,950	58.5
>65	515	.45	611	.54	1,126	.98
Total	55,012	48.08	59,414	51.92	114,426	100

Source: Annual Report of Burayu Municipality, 2011

3.2.4.2 Unemployment Rate

Based on the survey conducted by CSA in 1994, the unemployment rate for Burayu town was estimated to be 21.58 percent. This is a bit less than the urban average unemployment rate of the country 22% and larger than the corresponding figure for Oromiya region 15.3 % (IDP, 2006). Unemployment rate in terms of sex reveals higher unemployment among female 27.3 %, than males 18.10 %. In 2005 the total number of unemployed population in the town was estimated to be 3000 (IDP, 2006). But in 2011, data from the municipality indicate that there were about 51.76% peoples were unemployed and in search of job (the reliability of data may be questionable) (Report, 2011).

The mismatch between labor force and economic growth coupled with the rural-urban migration mainly attributed to this state of relationships. To this end, due attentions should be given to the promotion and development of micro and small enterprises and private investments.

Among the job seekers, some of them may be employed in the informal sector. Although data on the exact number of informal activities and persons engaged in the activity is not available, it is estimated that a significantly large number of people are engaged in the sector.

3.2.4.3 Micro and Small Enterprises (MSE)

The principal objective of the national strategy framework is to create an enabling environment for small and micro enterprises. To achieve the targeted goal, the MSE promotion desk was established in 2005. It was established under the city administration and now changed to MSE Agency. The agency has also managed to organize about 318 MSE cooperative associations in different lines of business such as dairy farming,

manufacturing, services, construction and trade. The MSE sector is characterized by highly diversified activities and is organizing a numbers of cooperatives which can create job opportunities for a substantial segment of the population. This indicates that the sector is a quick remedy for unemployment problem. To curb urban unemployment problems, the agency facilitates the environment for new job seekers and encouraging self employment as a direct intervention and supports of the government is crucial.

Despite their significant contribution to the urban economy, micro and small enterprises face a number of challenges which hinder their growth. The major problems among others include: lack of working premise, shortage of working capital, lack of demands for their products, high cost of raw material, weak backward and forward linkages between and within the sectors and the existence of high dependence on government support and low saving culture on the parts of some operators.

Thus, to intensify the role of MSEs in the local economic development the micro and small enterprise agency collaboration with other institutions should give due attention, among others, to the development of cluster, to the creation of inter-sectoral linkage, facilitation of credit and, provision of business development service (BDS) and inclusion of the informal sector in the packages.

3.2.4.4 Informal Sector Activities

As a concept, the informal sector refers to home based or individual establishment, operated by the owner with few or no employees. They are for the most part unregistered and operating on a very small scale and with a low level of organization. Most of the informal sectors have very low level of productivity and income. They tend to have little

or no access to organized markets, to credit institutions, to modern technology, to formal training and to many public services and facilities (MTIT, 1997).

A large number of them are carried out without fixed location or in places such as small shops, outlets or home-based activities. The informal sector is the major provider of employment and income for the urban poor. It plays an important role in employment creation and poverty alleviation by providing incomes to unskilled and semi skilled workers who otherwise would be unemployed. Therefore, in order to promote the development of trade based on the principle of free market, gradual formalization of the informal sector is essential. They have fertile ground to convert in to micro and small enterprise.

3.2.4.5 Availability of Financial Institutions

Financial institutions are playing their role in strengthening the financial linkage. They provide financial service such as saving, credit, and money transfer service to the urban dwellers, MSEs. and the surrounding rural areas. Financial intermediaries are very important agents in streaming the flow of finance particularly from urban to rural or urban to urban areas. Existence of financial institutions in a city is one of the criteria used by investors to invest in the city or not. In the Burayu town there are four banks and four micro finance institutions which help to smooth financial transactions in the area.

Finance helps growth by raising and pooling funds, allowing more investments to be undertaken. Finance can help more specifically by distributing opportunities more fairly. The existence of micro finances is also important to provide credit for the poor households and MSEs. The financial flow between rural and urban and within the urban areas is an important manifestation of socio - economic linkages.

3.2.4.6 Urban Waste Management Activities

One of the major environmental problems of urban centers is waste generated by different activities. Inappropriate waste management in urban centers can hinder urban socio economic development opportunities. Improper waste management practice, lack of proper waste collection vehicles for solid & liquid wastes, and limited public and community toilets, etc forced the people to dispose their wastes in any open fields.

MSEs are organized to collect solid waste from an individual house in the town, but it is collected and stays on the road side for longer period of time. These dumps make very uneconomical use of space, allow free access to waste pickers, animals and flies, and often produce irritating odor and unpleasant surroundings.

The slaughterhouse found in the town uses large quantity of water and discharge effluent with high content of blood, waste and cleaning detergents to the Burayu River and cross the town. Slaughtering process generates pollution problems. Emission of odor from liquid and solid wastes is significant problem particularly for those who are at the river basin. It pollutes the surrounding environment which could be source of health problems. Consequently, there are sources of environmental, health, psychological and social problems.

Inadequate basic infrastructures provisions such as access roads, sanitary facilities and low level of environmental awareness of the community have an impact on the environment of urban area to live. Moreover, unplanned distribution of manufacturing industries, agro-processing industries and dairy farms, etc, and their poor waste management systems exacerbate environmental problems in some part of the town. Solid and liquid waste management is therefore one of the issues for which the Municipality should give due attention during the planning period in order to make the urban an attractive and suitable to live in.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION

The chapter begins with the explaining the characteristics and background of those respondents and followed by the results of the socio-economic analysis of the cobblestone workers in the Burayu town of Micro and Small Enterprise cobblestone operators.

4.1. Background of the Respondents

The study covers a sample of 86 participants and operators. The characteristics of the respondents treated here are those MSE operators who are workers in Burayu town. They are both male and female operators that are given equal chances to be selected.

4.1.1 Sex and age composition of the respondents

As one can observe from table 4.1 below, majority of the respondents are female that account 61.2% of the total respondents. On the other hand, the remaining 38.8% is male. Despite the fact that relatively fair representation of gender, number and sex composition in the MSE of cobblestone work are not equal. This is because male workers are leaving the work due to the inconsistency of the work. In responding the questionnaire, female respondents are higher in number and more active to respond it.

Table 4.1 Sex composition of the Respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	52	61.2	61.2	61.2
Male	33	38.8	38.8	100.0
Total	85	100.0	100.0	

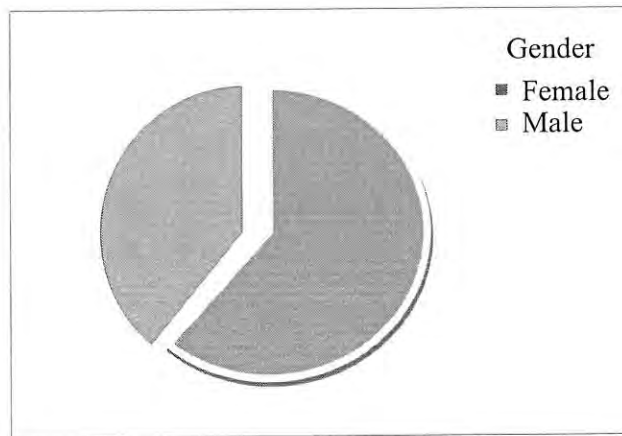


Figure 4.1 Sex compositions in pie chart

Table 4.2 Age category of the Respondents

Item		Frequency	Percentage
Age group	18-25	21	24.7
	26-33	46	54.12
	34-40	18	21.18
	Above 40	—	—
	Total	85	100

Source: Survey result

To be organized in MSEs of cobblestone work, one has to be an age of 18 years old. This is because the resident below eighteen years are considered as dependent to their family and are not allowed to be participate in a heavy works. Table 4.2 can clearly show us that those between 18 and 25 years account about 24.7%, whereas between 26 and 33 accounts 54.12 % of the total workers. The age between 18 -33 accounts about 78.82%

from the total respondents. From this we can conclude that, many of the youngsters are able to join the work.

4.1.2 Marital status and family size of the Respondents

Marital status against family size is cross tabulated. The average family size of the respondents is four (see table 4.4). The minimum family size of the respondents is one while the maximum is seven.

Table 4.3 Marital status of the Respondents

Family size	Marital status			Total	Percentage %
	Single	Married	Widowed		
1	3	1	0	4	4.7
2	1	5	1	7	8.2
3	2	17	0	19	22.35
4	1	17	1	19	22.35
5	2	17	0	19	22.35
6	1	10	0	11	12.94
7	1	4	1	6	7.06
Total	11	71	3	85	100
In %	12.94	83.53	3.53	100	

Source: Survey result

Table 4.4 Mean of Family size

Gender	Mean	N	Std. Deviation
Female operators	4.4615	52	1.39272
Male operators	3.6970	33	1.64858
Total	4.1647	85	1.53411

As we can observe from the table 4.3, the majority of the respondents are married, i.e. 83.53%, it is only 12.94% of respondents are single. About 67.05% of the respondents have family size between three and five. 20% of the respondents have family size of six and seven. On the other hand, respondents who have family size of one to two accounts for only about 13%.

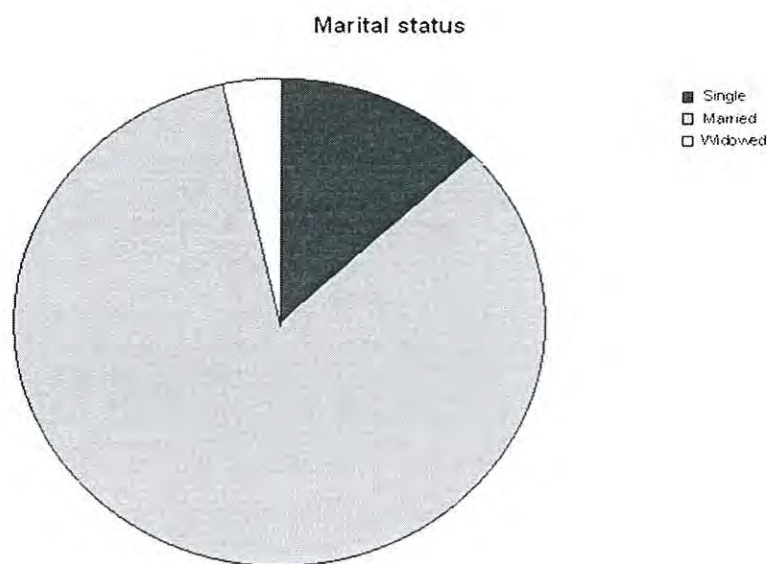


Figure 4.2 Marital status

4.1.3 Educational level of the Respondents

Educational Level and gender classifications are cross tabulated in table 4.5. When we see the educational level of the respondents, almost all of the respondents are under grade 10th except. About 93% of them are grade eight and below that. There is no college diploma holder and TVET graduates that are participated in the cobblestone work.

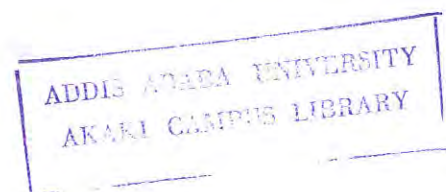


Table 4.5 Educational level and gender classification

Background classification		Educational Level										
		1	2	3	4	5	6	7	8	9	10	Total
Gender	Female	2	6	3	5	8	13	6	7	1	1	52
	Male	0	0	6	6	2	5	6	4	1	3	33
Total		2	6	9	11	10	18	12	11	2	4	85
In %		2.35	7.1	10.6	12.9	11.7	21.2	14	12.9	2.35	4.7	100

Source: Survey result

4.1.4 Position of the respondents in their family and cooperatives

Table 4.6 Position of the respondents

Descriptions	Are you the head of household?				Percentage (%)
		Yes	No	Total	
Your position in the organization	Coordinator	13	4	17	20
	Member	48	20	68	80
Total		61	24	85	100
Percentage (%)		71.76	28.24	100	

Source: Survey result

From table 4.6, we can observe that the majority of respondents (i.e. 71.76%) are their family leader or head of their household, while about 28.24% are member (subordinator) in the family. 20% of them are coordinators in the cooperative and 80% of them are members in their cooperatives.

4.1.5 Previous employment status

The Previous employment status of the operator in cobblestone works and the duration of time that they were engaged in the work are cross tabulated in the following table (table 4.7). From the table, we can analyze that a significant proportion of the MSE cobblestone operators, (i.e. about 59%) were have no permanent job. They were either daily laborer or sitting idle prior to joining the cobblestone work. Of those, about 24.7% declared that they were stayed at home sitting idle, 5.88% was student and 34.11% was daily laborer. The remaining 35.29% of the operator were somehow previously employed in one or other forms of employment in private sectors and farming. These indicate that MSE sector, especially cobblestone work provides an employment opportunity for many of unemployed peoples. About 47% of the workers have been working in the last two to three years, while about 53% of the workers have been working for more than three years.

Table 4.7 Previous employment status

Descriptions		For how long have you been working on cobblestone work?		Total	In %
		2-3 years	above 3 years		
What was your job or source of income before you join the cobblestone work?	Daily laborer	11	18	29	34.11
	Farming	0	3	3	3.53
	Student	3	2	5	5.88
	Employed in private sector	18	9	27	31.76
	Sitting idle	8	13	21	24.7
Total		40	45	85	
Percentage (%)		47.06	52.94		

Source: Survey result

4.1.6 Reasons for joining cobblestone work

The most dominant reasons for joining cobblestone work is lack of options (i.e. 83.53%) and preference to engaged in income generating schemes than being unemployed. Those who give reasons as lack of options are those unemployed peoples prior to joining the sector or employed in some informal and irregular or unproductive sectors, while those who preferred the work for better income are those who were previously working as employed of either in family or non family business sectors.

Table 4.8 Reasons why they join the cobblestone work

Descriptions		Why do you prefer the cobblestone work than the others work?				Total	In %
		Because I have no choice	Because I like it very well	Because of its higher income	Others		
Are you happy by joining the MSEs for the cobblestone work?	Yes, I am happy	48	3	7	0	58	68.2
	No, I am not happy	23	0	3	1	27	31.8
Total		71	3	10	1	85	
Percentage (%)		83.53	3.5	11.76		100	

Source: Survey result

As table 4.8 above indicates, 68.24% of the respondents are happy by joining the cobblestone work. Most of them were unemployed. But now they are employed and got an income generating works. The created job opportunities make them happy and interested in the work.

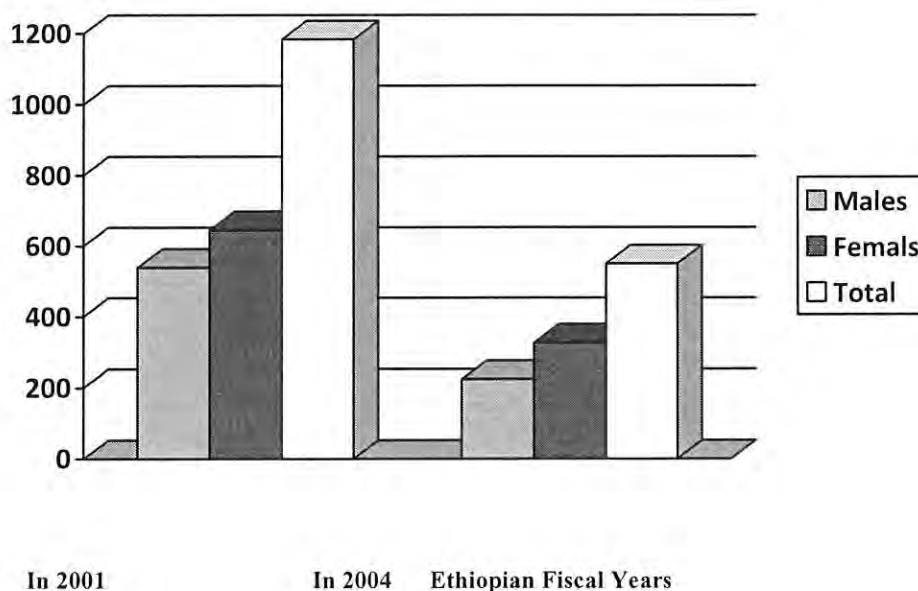
The lack of choices or options for those who are not employed in self-employment activities are the inability to access working capital or financial resource. The low levels of educational attainment of the operator also make them incompetent in other sectors because of low level of skills and knowledge. Most of the respondents which are about 93% are below grade eight (table 4.5). Due to this reason, they cannot able to be competent in other sectors.

From table 4.8 above, we can understand that there are about 31.8% of the operators is not happy in the work of cobblestone work due to the inconsistency of the work and the payments are not paid timely. Therefore, this can indicate us that, the city government of Burayu Town has to give an emphasis on the proper budgeting and evaluating the timely accomplishment of their perspective activities.

4.2 Contributions of the cobblestone work

4.2.1 Employment generation

Figure 4.3 Total number of cobblestone operators from 2001 – 2004 Ethiopian Fiscal Years



A significant number of unemployed peoples have been employed and working on the cobblestone works since 2008/09. But the number of workers is diminishing from time to time. In 2001 Ethiopian fiscal year, there were about 1184 operators on the cobblestone work but at the beginning of 2004, the report indicates that there were about 550 operators. When data collections are undertaken at March of 2004 (2012), many of the operators' especially male workers were released due to inconsistency of the work and miss managing system of the cobblestone sector in the city government. This miss managing systems are including the delaines of salary payment, material transportation, site selection and earth's work and preparation.

As the city government officers and experts indicate, the employment generation capacity of cobblestone work is great. Due to the budget constraint, the local government cannot able to finance the widely implementation plan of cobblestone works. Due to these reasons, a number of cobblestone operators are left out the works. To make the community a participant of the work, there are also fertile grounds organized at sub-kebele level (goti) on the area development program, but it is not efficient to mobilize and finance the work. The weak participation of the community, NGOs and CBO (Community Based Organizations) do not make the municipality too active in the construction of cobblestone road. Therefore, the municipality has to do more on fund raising programs and create conducive environment to mobilize the resource.

4.2.2 Relatively Better Income Earning

The average amount of monthly income level of the family before and after the cobblestone work is statistically calculated. As it is clearly indicated (Annex; 1), the individual income earning levels of the operator are statistically calculated. By taking the initial level 300 and the final 1500, both the before and after cobblestone work results are indicated.

As it is calculated, a significant number of the respondents (i.e. 56.47%) indicated that their income was less than Birr three hundred. While 27.06%, 10.58% and 5.9% of the respondents have paid between Birr 301-600, 601-1000 and 1001-1500 respectively. After they engaged in cobblestone work, the percentage of low paid (less than 300) has decreased to 12.9%. While the percentage of income recipients between the ranges of Birr 301 to 600, 601 to 1000 and 1001 to 1500 have risen up to 50.59%, 22.35% and 11.76 respectively. This indicates us that cobblestone work is enabling the individual to increase their income.

A few individuals received relatively higher level of income. About 14.11% of the respondents have paid monthly income above 1000 Birr. However, most of the respondents received less than Birr 1000. The main reason for the low-income level of is not the nature of cobblestone work, but the operators are working only two or three days per week. They cannot work as a permanent work all the working days. Due to the shortage of budget, the municipality cannot able to finance cobblestone road constructions.

The average monthly income level of the operators before they engaged in the cobblestone work was less than 300 Birr (i.e. 56.47%). After they engaged the work, the average income level is increased to the level of Birr 301-600Birr (i.e. 50.59). From

these we can conclude that, cobblestone works enable the operators to get more income than the other works or being unemployed.

Table 4.9. Table of the Paired Samples T-Test

Descriptions	Paired Differences					t	df
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
				Lower	Upper		
The average amount of monthly income level of your family before the cobblestone work - monthly average income level of your family after you join cobblestone work?	-.74118	1.18676	.12872	-.99716	-.48520	-5.758	84

Source: Survey result

As it is indicated on the statistical calculations, the income change due to the cobblestone work is statistically significant (see annex, 2).

4.2.3. In Gender Consideration

The average amount of monthly income level of the respondents family before and after the cobblestone work are calculated in the Cross tabulation of the following table. Regarding gender consideration, whether there is significant difference or not between male and female recipients of monthly income on cobblestone work, it is indicated on the table 4.10, below.

Before the cobblestone work, larger number of females and males (63.46% and 45.45% respectively) were earned lower level of income which is less than Birr 300. After they join the work, these percentages were significantly decreased. In addition to that, the discrepancy between male and female income earning level is also reduced. Gender

variation in monthly income earning is not significantly different in cobblestone work. As 11.54% of the females receives less than 300 Birr, while 15.15% of males receives the same amount of Birr. The percentage of females that receive less than Birr 300 is little bit less than that of males after they join cobblestone work. But before the cobblestone work 63.46% of females and 45.45% of the males were paid less than Birr 300.

Table 4.10 Gender consideration of income recipients

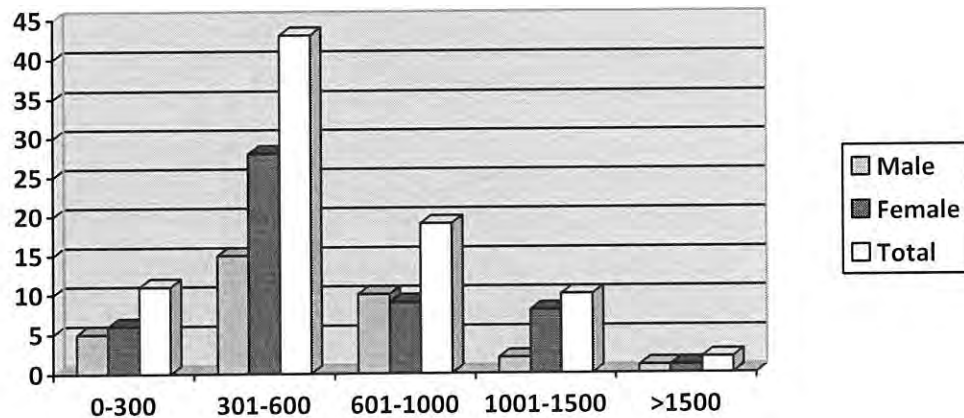
The average amount of monthly income level of your family before the cobblestone work						Total
Gender	Less than 300 Birr	Between 301 and 600 Birr	Between 601 and 1000 Birr	Between 1001 and 1500 Birr		
Female	33 (63.46)	13 (25)	4 (7.69)	2 (3.85)		52
Male	15 (45.45)	10 (30.3)	5 (15.15)	3 (9)		33
Total	48	23	9	5		85
The amount of monthly average income level of your family after you join cobblestone work						Total
Gender	Less than 300 Birr	Between 301 and 600 Birr	Between 601 and 1000 Birr	Between 1001 and 1500 Birr	Above 1500 Birr	
Female	6 (11.54)	28 (53.85)	9 (17.3)	8 (15.38)	1 (2)	52
Male	5 (15.15)	15 (45.45)	10 (30.3)	2 (6)	1 (3)	33
Total	11	43	19	10	2	85

Source: Survey result

Before the cobblestone work, the percentage of female who receive between Birr 301-600 was 25%, while that of the male was about 30.3%. After they engaged in the work, 45.45% of the male and 53.85% of the female are earning an income of between Birr 301-600. Moreover, females who earn higher level of income more than Birr 1500 is

about 2% of the total female respondents and for that of male it is about 3%. Therefore, the income earning level of males and females in cobblestone work is not significantly wide-ranging.

Figure 4.4 Income ranges of the operators after they join the cobblestone work



4.2.4 Asset Creation

Table 4.11 below, shows that the cross tabulation of improvement of individual income and wealth created due to the improvement of their income. The MSE operators were asked to describe their wealth created after joining the enterprises. It is possible to see that there are significant positive changes. 76.47% of the respondents are replied that there is an improvement of their income, out of which 80% of them able to create additional wealth i.e. house, business foundation, house furniture and equipments. The remaining 20% of them are with an increment of their income but, they do not able to generate an additional wealth. The figure in the bracket indicate that the percentage.

Table 4.11 Asset created due to the changes of income

		From the following plant assets or wealth, which one of them you create due to improvement of your income?				
Descriptions		House	House furniture and equipments	Business foundation	Nothing	Total
Is there any improvement of monthly income due to cobblestone work than before?	Yes, there is some improvement	1 (1.5)	50 (76.92)	1 (1.5)	13 (20)	65 (76.47)
	No, there is no change of income	0	1	0	19	20
Total		1	51	1	32	85

Source: Survey result

Whether the wealth creation of an individual came from another source of income or not they are asked. Most of the respondents are replied that there is no additional source of income. About 91.76% of the respondents have no additional source of income. This can indicate that, if the cobblestone work is properly managed and implemented, the operators can able to improve their life and able to create a sufficient income for their family.

4.2.5 Other source of income

The cobblestone work enabling the operators to improve their entrepreneurial ability to establish other micro and small enterprise business foundations. This is an indication for the respondents to improve their livelihood of the operators. In addition to this, the work enables them to acquire financial management and business running skills.

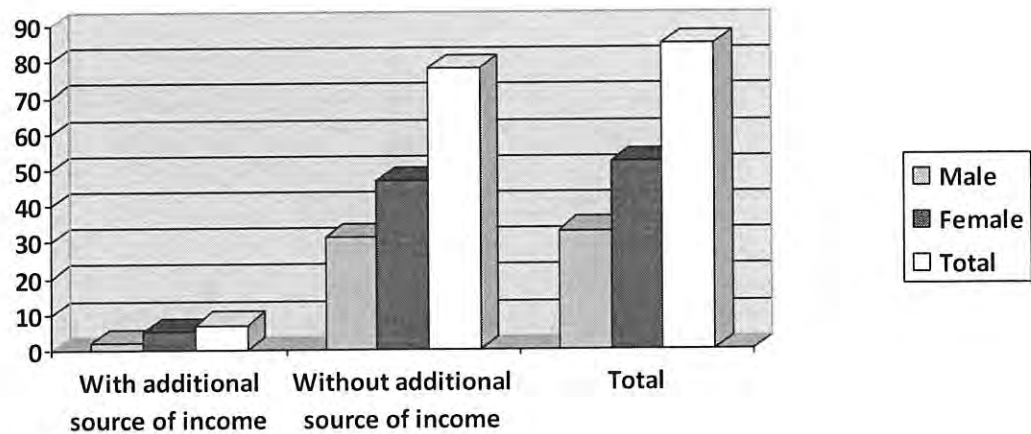
Table 4.12 Other gains from cobblestone work

Descriptions		Gender		Total	Percentage (%)
		Female	Male		
Skills and knowledge have you acquired in the works of cobblestone work	Business running skills	6	7	13	15.29
	Financial management skill	14	6	20	23.53
	Entrepreneurial ability	32	19	51	60.00
	Others	0	1	1	1.17
Total		52	33	85	
Do you have other sources of income?	Yes, I have	5	2	7	8.24
	No, I don't have other sources of income	47	31	78	91.76
Total		52	33	85	
If yes, what is the amount of your income that you get from other sources?	Less than 300 Birr	1	2	3	
	Between 300 and 600 Birr	1	0	1	
	Between 1001 and 1500 Birr	3	0	3	
Total		52	33	85	

Source: Survey result

The above table (table 4.12), indicate that whether the operators have another source of income or not. As the table indicates that, almost all (91.76%) of the respondents replied that they have no other source of income. Only 8.24% of the respondents have an additional source of income. This can indicate us that, the cobblestone work helped the operators to live and improve themselves without an additional source of income.

Figure 4.5 Frequency of operators with and without additional sources of income



4.2.6. Enabling them to save

From the total number of respondents, 35.29% of them were not saving before the cobblestone work, while 52.29% of them have been saving less than Birr 50 per month. After they join the cobblestone work, almost all (about 91.76%) of the respondents are engaged in saving. There are about 31.76% and 43.53% of the respondents are saving their monthly income at different amount of money less than 50 Birr and between 51 Birr to 100 Birr respectively. As the income level of the respondent is increasing, it is enabling the individuals to save their money for the future investment and betterment of tomorrow.

In general the number of respondents those who have been saving their money before the cobblestone work was 64.7% and it is increased to the number of 91.76% after they engaged in cobblestone work. This can indicate that, the cobblestone works enable the individuals to save some proportions of their money for different purposes.

Table 4.13: Monthly saving capacity of the respondents

		What is the amount of your monthly saving since you began this work?						In %
Descriptions		Less than Birr 50	Between Birr 51 to 100	Between 101 and 200	Greater than Birr 200	No saving	Total	
What was the amount of your monthly saving before cobblestone work?	Less than Birr 50	15	25	7	0	0	47	55.29
	Between Birr 51 to 100	1	3	1	0	3	8	9.4
	No saving	11	9	1	5	4	30	35.25
Total		27	37	9	5	7	85	
Percentage (%)		31.76	53.53	10.59	5.88	8.23	100	

Source: Survey result

From the majority responses, it is possible to conclude that cobblestone work is not only employment generating but also improving the saving rates of the operators.

4.3 Supporting strategies for the MSE works

In terms of supporting the micro and small enterprises especially on the cobblestone works, the government has done a lot. Some of them are; organizing the unemployed peoples in to MSEs, providing training and working site and facilitating micro finances to give credit. Most of the MSEs are benefited from that supports. About 99% of the operators have taken the formal training on cobblestone works and 9.41% of the respondents have got initial working capital. In addition to these supports, there are also technical, administrative and material supports are provided. As it is indicated in the following table, the duration of the training was depends on the institutions that was provided the training. Most of them (about 68.24%) have trained for less than three

months. Table 4.14 indicates, only 17.65% of the operators have trained for three to six months during the start time. Therefore, the cobblestone operators are greatly benefited from the provision of training that was provided by the TVET (Technical and Vocational Education & Training) centers.

Table 4.14 Trainings

Descriptions	From where you get initial working capitals to purchase working materials?			
		From myself (personal saving)	The municipality of the town provide us	Total
Have you taken formal training on the cobblestone work?	Yes	76	8	84
	No	1	0	1
Total		77 (90.58)	8 (9.41)	85
If your answer is 'yes', for how long the training was given?	less than 3 months	58 (68.24%)	8 (9.4%)	66
	3 to 6 months	15 (17.65%)	0	15
	more than 6 months	4	0	4
Total		77	8	85

Source: Survey result

4.3.1 Types of supports

As it is indicated at table 4.15, there are different kinds of supports that are provided to the MSE operators. From the total respondents 74.12% are received different kinds of support. Such as technical support, administrative supports, financial supports and material support. About 25.88% of the respondents are claimed that there is no support that was provided to the MSE sector. But this idea is contradicted with the 99% of the

operators that have taken formal training on cobblestone works. Therefore, the respondents are either misunderstood or deliberately distorting the ideas.

Table 4.15.Types of support in ranking

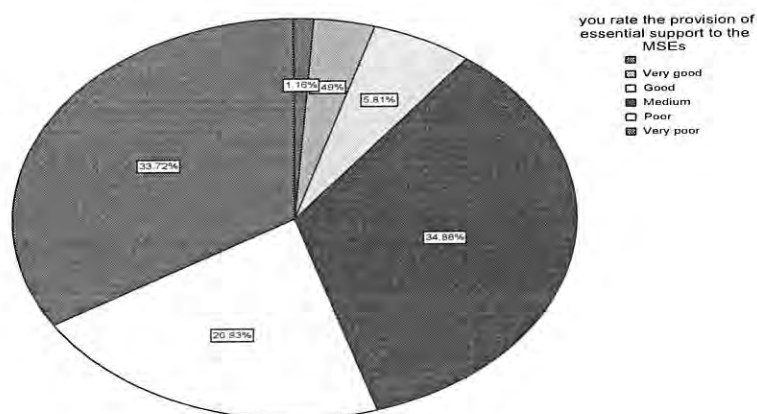
Descriptions		Gender		Total	In %
		Female	Male		
What types of support are provided to enhance the performance of MSEs on cobblestone work?	Technical support	18	9	27	31.76
	Administrative support	7	2	9	10.59
	Financial support	3	3	6	7.06
	Material support	10	11	21	24.7
	No support is given	14	8	22	25.88
Total		52	33	85	100
When you grade the provision of essential support to the MSEs, it is	Very good	1	2	3	3.53
	Good	2	3	5	5.88
	Medium	21	9	30	35.29
	Poor	12	6	18	21.17
	Very poor	16	13	29	34.12
Total		52	33	85	100
What are the reasons to be poor or very poor?	Lack of supporting body	11	9	20	23.53
	Lack of potential for supporting	4	4	8	9.41
	Lack of integration between MSEs and concerned body	12	5	17	20
	Lack of willingness to support	1	3	4	4.7
	-	24	12	36	42.35
Total		52	33	85	100

Source: Survey result

On the other hand, when the operators are asked to rank the provision of essential support to the MSEs, 55.29% of them are rated as it is poor or very poor. The main reasons that they are considering as poor and very poor is that, the communication between MSE operators and the municipality is very loosely. Their payments or salaries are not paid timely and the work is not continues. The bureaucratic and corrupt behavior of the government officials make the operators not to interest in the work of cobblestone. Due to these reasons, many of them are dissatisfied and forced to leave the works. Those who are there still consider and stated as lack of supporting body, lack of integration between MSEs and concerned body, lack of potential for supporting and lack of willingness to support the MSEs. These indicate that whatever the supports provided to the MSE operators, they are dissatisfied with discontinuities of the supporting.

From these we can conclude that, the micro and small enterprise development strategies has to be based on the efficiencies and profitability of the work and not on the number of the organizations that they able to create and trained. The training strategies of the MSEs have also been thought strategically. It has not done for the sake of media consumptions.

Figure 4.6 grading the supports provided to MSEs (pie chart)



The elements of the support programs should include measures with regard to creating an enabling legal framework and reformation regulatory conditions that hinder the coming up of new and expansion of existing MSEs. In addition, the specific support programs also include measures related to facilitating access to finance, provision of incentives, promotion of partnerships, training, access to appropriate technology, access to market, access to information and advice, infrastructure and institutional strengthening of the private sector associations.

4.4 Challenges of the cobblestone work

It was previously highlighted that there were a range of supporting services provided to the MSE sectors in order to make them competent to ensure sustainability and growth in the economy. But the cobblestone works have faced numerous challenges that need to be overcome in order to ensure smooth functioning and sustainability. The challenges come from the nature of the work and inadequacy of the supporting service. The most significant obstacles are shortage of supplying raw materials i.e. 44.71%, lack of financial supports or inadequate financial supports (25.88%) and lack of working sites (21.17%) that the respondent are replied. In addition to these, budget constraint is also one of the major issues that the sector has faced.

The following table is an indicator of what the respondents are responds regarding the major problems that they have faced by ranking. But on the table, the first rank only stated.

Table 4.16 Major challenges on the cobblestone works

Descriptions		Gender		Total	In percent
		Female	Male		
What are major challenges in the performance of cobblestone work	Lack of training supports	0	1	1	1.18
	Lack of financial supports inadequate support	13	9	22	25.88
	Loose coordination system	4	2	6	7.06
	Shortage of raw materials	22	16	38	44.71
	Lack of working site	13	5	18	21.17
Total		52	33	85	100

Source: Survey result

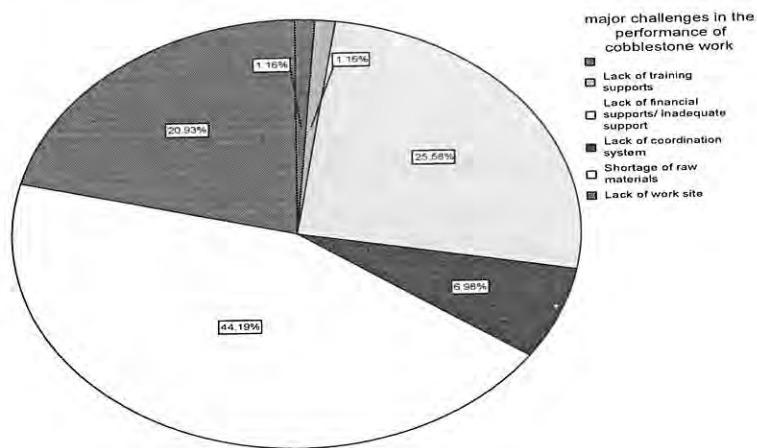
4.4.1 Transporting raw resources

Even if the raw materials are available around, loading and unloading of the raw resources from the extraction areas require heavy tracks, which is a not easy task to the micro and small enterprises to have it. The municipality of the town has been brought the raw resources, but now due to the highly inflated transportation price it was decided to bring by them. For the micro and small enterprises of cobblestone operators, covering the transportation cost without an additional payment makes them unprofitable. In addition to that, the paving operators are not working throughout the month. It is seasonal and work only when budgets are allocated. Even when the budgets are available and released, the working sites are divided among the cooperatives to pave it turn by turn or by sharing. Due to these reasons, the numbers of operators are diminishing through time.

In terms of financial supports, it has been one of the most important to strengthen the micro and small enterprise sector. At the initial steps of material purchasing, 90.59% of the operators (table 4.14) are from their own saving and private creditor. This also indicates that there is a gap between supply and demand of financial services to support

the MSEs. Therefore, the importance of micro and small enterprises are unquestionable in fitting against urban unemployment, but have faced a numerous challenges to be overcome in order to realize development.

Figure 4.7 Major problems on cobblestone works (by pie chart)



4.4.2 Work area safety

Work area safety or security is one of the most important that the operators are taking in to consideration and it is required for the health of operators. Among the respondents, 41.18% of them are replied that they have faced health problems. The health problems that they have faced were associated with the respiratory organ of their body. The cobblestone works are exposed to dusty powders or fine particles. These particles can be causes for respiratory diseases. Therefore, it needs proper protection before they are affected by these particles. Furthermore, first aids and on work security practices have to be designed for the operators before they are affected by the various respiratory diseases. In addition to that, holding back the quarry sites out of the city and functioning during rainy seasons are recommended to keep the safety of the environment.

Table 4.17 Analysis of cobblestone works and health associations

Descriptions		Gender		Total	Percentage (%)
		Female	Male		
Is there any health problems associated with the cobblestone works that you have faced?	Yes	18	17	35	41.18
	No	34	16	50	58.82
Total		52	33	85	100

Source: Survey result

4.5 Employment absorption of the cobblestone work

Employment is one of the indicators of gender perspective analysis of livelihoods and serves as the generator of sufficient and sustainable income. With its absence, the households become unable to earn for their living. However, a general concern with employment is tending to focus on large scale enterprises and the formal sector. However, employment definitions ought to be wide, including working in the urban informal sector with problems of recording. This could be because many urban employment activities are invisible or not perceived as work and never gets recorded or adequately estimated.

In addition, the majority of organized employment data focus on paid employment and definitions do not include a variety of activities pursued by household members, most notably reproductive and community work, which is largely performed by females. Therefore, the investigation on the employment situation of the sampled operators of Burayu Town is largely similar to the employment conditions in other parts of the country. It examines that there are differences in occupational distributions among male and female-headed households.

The continuity of any job can be predicted based on the gains from the work. It is explained that the work is contributing a great role in poverty reduction and employment generations. As it is indicated on the table 4.18, the respondents were asked for how long they continue on the job of cobblestone work. They replied that 25.88%, 37.64%, and 36.47% of the respondents want to continue for 2 to 5, 5 to 10 and above 10 years respectively. The reason why they continue for longer period of time is that they were unemployed and have no other choice to leave the work. If they have got another alternative they may shift their job to the better one.

Table 4.18: Continuity of the cobblestone work

		Do you have a plan for the technological advancement of the cobblestone work?			
Descriptions		Yes	No	Total	In (%)
If your answer is "yes" how do you want to improve	by planting machine	17	0	17	20
	using manual tools	17	2	19	22.35
Total		34	51	85	100
What skills and knowledge have you acquired in the works of cobblestone work?	Business running skills	4	9	13	15.3
	Financial management skill	6	14	20	23.5
	Entrepreneurial ability	23	28	51	60
	Others	1	0	1	-
Total		34	51	85	100
For how long will you continue on the job of cobblestone work?	From 2 to 5 years	6	16	22	25.88
	From 5 to 10 years	16	16	32	37.65
	For more than 10 years	12	19	31	36.47
Total		34	51	85	100

Source: Survey result

A significant numbers of the respondents (i.e.40%) of them have a plan for the technological advancement of the cobblestone work. In addition to that about 60% of the respondents are acquired business running knowledge or entrepreneurial ability, 23.5%

financial management skill and 15.3% business running skill to improve their lives. From these we can conclude that the cobblestone work is an important source of income for many of the operators and enabling strategies to improve their lives.

4.6 Sustainability of the cobblestone work

When we observe the sustainability of the cobblestone work, it is believed that the work is environmental friendly. Being a labor intensive one, during the quarry, chiseling and paving it produces manageable dusty materials. These dusty particles can be controlled by work area safety. Otherwise it does not pollute the environments with heavy chemical substance. As it is indicated on the table 4.19 blow a significant number of respondents (41.18%) replied that the extraction areas of the raw resource are not exposed to erosion. Only 9.41% of the respondents are indicated that, the areas are exposed to erosion problems. But 49.41% of the respondents do not know the problem that associated with the extraction areas. Most of the operators are at lower educational level and are not able to predict the environmental problems that are associated with erosion and environmental degradation. Practically the area is covered by stony, it is not exposed to gully erosion. The gully erosion can eroded the top soil of the area and become a cause for environmental degradation.

Therefore, cobblestone work is a local resource that helps to realize the local economic development and social improvement of the area without affecting the environment, instead improving social value of the environment. From this we can conclude that, cobblestone work is economically viable, socially acceptable and environmentally sustainable.

Table 4.19 Sustainability of the cobblestone work

Descriptions	How is the prevalence of the environment to erosion due to extraction of cobblestone from the source?					
	There is no erosion problem on the environment	It causes environment degradation due to erosion	I do not know its effect on the environment	Total	In %	
Is there any gender consideration of the employment generation schemes of the MSEs works of cobblestone?	Yes	6	0	14	20	23.53
	No	29	8	28	65	76.47
Total	35	8	42	85		
Percentage (%)	41.18	9.41	49.41	100		
If there is gender consideration in employment generation of cobblestone, to whom priority is given	Priority is given to female	6	0	12	18	21.18
	Priority is given to male	0	0	2	2	2.35
	Equal chance is given	29	8	28	65	76.47
Total	35	8	42	85	100	

Source: Survey result

Regarding gender consideration of the employment, a significant number of respondents (76.47%) are replied that there is no gender disparity in employment generation of the work. It gives equal chances for both male and female. About 21.18% of the respondents indicated that priority is given to female.

The development of cobblestone work is benefiting the most vulnerable groups that are the poor, unemployed and woman. However, the sustainability of the sector is greatly depends on public investments. Based on the data obtained from the town, it is observed that community participation is too weak to support and invest in their local area developments.

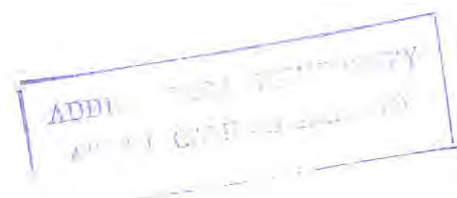
4.7 Community participations

Table 4.20 Participation of the cobblestone work

When you compare cobblestone road to the asphalt road with the following points, which one is better?		In terms of employment generation?				
		There is no difference	Asphalt generate more employment than Cobblestone	Cobblestone generate more employment than Asphalt	Total	In %
In terms of local community participation	Asphalt road is more participatory than Cobblestone road	0	0	7	7	8.23
	Cobblestone road is more participatory than Asphalt road	4	3	71	78	91.77
Total		4	3	78	85	

Source: Survey result

Utilizing local resources provide three basic advantages for local community; offering new job opportunities, fulfilling the desire of new entrepreneurs and contributions for local economic, social and environmental renewal. Ultimately, local economic



development can be achieved through active mobilizations of local resources, strengthening community and key stakeholders participation, and developing indigenous capacities. As it is indicated (table 4.20) below, cobblestone work is more participatory than asphalt work. But in Burayu, it is failed to realize efficiency in the participation of the community, NGO and CBO to mobilize resource. Due to budget constraint and inability to mobilize the resource, what planned was not implement fully.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

This section of the paper is the critical part of the study. Because this part of the paper presents the main results of the study in a brief way as well as by indicating the major findings as conclusion. The main themes of the findings are summarized in to simple, prices and understandable manner. It is also provides the policy implication of the results of the study.

5.1. Conclusion

This study is conducted in Burayu Town of Oromia Region, aiming at analyzing the socio-economic significance of cobblestone work to curb urban problems. Such urban problems are mainly unemployment. The quantitative method of data analysis is employed in the study. The study indicated clearly that the multi- dimensionality of urban problems. In the study area, therefore, higher level of unemployment and poverty is perceived due to low level of employment opportunities. Urban unemployment problems have also been aggravated due to the overpopulation in migration. In addition to this, inadequate implementation of urban planning of the town resulted in poor housing conditions without: water, poor physical infrastructures, slums and squatter which are illegal settlements. These are some of the urban problems in the town. Based on these, the major findings of the paper are:

- In Burayu town it is identified that the unemployed people are significantly benefited from MSE works in income earning opportunities of the cobblestone work.
- There is no gender variation in employment generating opportunities in the MSEs. But the backlog of unemployment and poverty that mostly deprives the

females is still unresolved. Consequently, the cobblestone work participation is a good opportunity for the female population.

- There is no significant difference between male and female operators in terms of income earning level of the cobblestone works. The income generated from cobblestone works are enabling the individual to create assets and stimulating them to save some portion of their monthly income for future expenditure.
- It is identified that the dust particles that are generated from cobblestone works can affect the health and safety of the operator due to the inappropriate conditions of the work area.
- The study has also showed that the area where cobblestone road construction has been taken place greatly benefitted the urban population in terms of mobility, increased business opportunity and ultimately has contributed to the urban poverty reduction. It has social and economic advantages to the operators as well as their community. It does not cause an environmental deterioration or pollution.
- The budget allocated for the construction of cobblestone road is not sufficient. It needs an additional source of budgeting from NGOs, Community Based Organizations (CBOs), community at large and other volunteer participants.
- The study has also identified that some of the challenges that are bottlenecks for further developments of cobblestone works are: lack of financial support for the MSEs, lack of material supports to transport the raw materials and work site premises are some of the problems that the sector has faced.
- Cobblestone work is a local resource that helps to realize the local economic development and social improvement of the area without affecting the environment. Actually, it is improving the social value of the environment. From

this we can conclude that, cobblestone work is economically viable, socially acceptable and environmentally sustainable.

5.2 Recommendations

The MSE cobblestone work has greatly generated employment opportunities for unemployed peoples as well. The employment absorption of the work is clearly an indication of the importance of the sector in fighting against urban unemployment problems. The cobblestone work is not the only solution to curb urban problems. Due to the multidimensionality of urban unemployment problems, many interventions have to be needed. In order to prevent rural-urban migration, to minimize the push and pool factors between urban and rural areas, balancing the growth is needed.

In addition to that further researches have to be conducted on the causes and consequences of the overpopulation in the Town. Based on the results of this study, the following points are forwarded to mitigate the major problems of MSE cobblestone work in Burayu town for policy implication.

- To expand the job opportunities and bringing about radical changes on the livelihood of the individuals in the town, the city government has to create conducive environment for different kinds of investments.
- The micro and small enterprise agency has to providing adequate, comprehensive and continues technical and administrative supports for the MSE operators to make them competent in the market and in the economy at large.
- Work area safety has to be given attention to save the workers life because the dust particle can causes health problems associated with respiratory organ of the operators. In addition to that, the city government has to develop mechanisms for

first aids provision in social and industrial security of the sector. Therefore, it needs proper care of the individual work area safety to ensure work area safety.

- Some of the trends in the implementation processes of urban governments attempt to strike to solve urban problems have to take in to consideration of the community at grass root level. Local economic development cannot be achieved without community participation. Therefore, community based organizations and the community at large has to take part of the financing cobblestone work to develop their areas. Otherwise top to bottom strategies of budgeting may not cover all the public and capital investments especially on the inner city road infrastructures.
- Proper training and certification of the workers, building unit of purpose among the community and maintaining the spirit of working in an organized manner to develop the areas ought to have furthest attention and considerations to the local development program.
- In an effort to maximize the impact of competitive bidding and maintenance of the cobblestone work by way of reducing cost and delivery time, it is essential to outsource the works and setting the work standards of the operators.

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Annexes

Annex: 1 Table of the Income level of the respondents

Descriptions	What is monthly average income level of your family after you joins cobblestone work?
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	Less than 300 Birr		Between 301 and 600 Birr	Between 601 and 1000 Birr	Between 1001 and 1500 Birr	Above 1500 Birr	Total	In %
	Less than 300 Birr							
What was the average amount of monthly income level of your family before the cobblestone work?	Less than 300 Birr	8	32	4	4	0	48	56.47
	Between 301 and 600 Birr	0	5	15	1	2	23	27.06
	Between 601 and 1000 Birr	0	4	0	5	0	9	10.58
	Between 1001 and 1500 Birr	3	2	0	0	0	5	5.9
Total		11	43	19	10	2	85	100
Percentage (%)		12.9	50.59	22.35	11.76	2.35	100	

Annex 2, Table of Statistical calculations of income before and after cobblestone workers

Level of Income (before cobblestone workers) Class interval	Mid Point (X ₁)	Frequency (f)	f.X ₁
Less than or = 300	300	48	14,400
Between 301-600	450	23	10,350
Between 601-1000	800	9	7,200
Between 1001-1500	1250	5	6,250
Above 1500	1500	0	0
Total		85	Σ f.X₁ = 38,200 $\bar{X}_1 = 449.41$
Level of Income (after cobblestone workers)	Mid Point (X ₂)	Frequency (f)	f.X ₂
Less than or = 300	300	11	3,300
Between 301-600	450	43	19,350
Between 601-1000	800	19	15,200
Between 1001-1500	1250	10	12,500
Above 1500	1500	2	3,000
Total		85	Σ f.X₂ = 53,350 $\bar{X}_2 = 627.65$

Source: Survey result

$$\bar{X}_1 = \frac{f \sum (\bar{X}_1)}{\sum f}, \quad \bar{X}_1 = 449.41 = \text{mean1}$$

$$, \quad \bar{X}_2 = 627.65$$

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \quad \sigma_{\bar{X}_1 - \bar{X}_2} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$$

The standard error of the difference between two means ($\sigma_{\bar{X}_1 - \bar{X}_2}$) can be determined using a pooled estimate:

$$\sigma_{\bar{X}_1 - \bar{X}_2} = \sqrt{\frac{S_1^2}{N_1 - 1} + \frac{S_2^2}{N_2 - 1}}$$

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{N_1 - 1} + \frac{S_2^2}{N_2 - 1}}} = \frac{44941 - 62765}{\sqrt{\frac{(0.886)^2}{85 - 1} + \frac{(0.799)^2}{85 - 1}}} = \frac{-17824}{\sqrt{\frac{0.785}{84} + \frac{0.638}{84}}} = \frac{-17824}{\sqrt{0.01694}}$$

$$= \frac{-17824}{0.13015} = -1369$$

The statistic that we use to test the difference between the means of dependent or correlated samples is:

Intervals	After	Before	Deference (D)	D ²
<300	11	48	-37	1369
301-600	43	23	20	400
601-1000	19	9	10	100
1001-1500	10	5	5	25
>1500	2	0	2	4
Total	85	85		1898

$$t = \frac{\bar{D}}{S_{\bar{D}}} \quad \text{where} \quad S_{\bar{D}} = \frac{S_D}{\sqrt{N}}$$

Annex 3. **Report on** Monthly average income level of your family before you join cobblestone work?

the average amount of monthly income level of your family before the cobblestone work	Mean	Std. Deviation	Variance
---	------	----------------	----------

Less than 300 Birr	2.0833	.76724	.589
Between 300 and 600 Birr	3.0000	.79772	.636
Between 601 and 1000 Birr	3.1111	1.05409	1.111
Between 1001 and 1500 Birr	1.4000	.54772	.300
Total	2.4000	.94112	.886

Annex 4. **Report on** the average amount of monthly income level of your family after the cobblestone work

Monthly average income level of your family after you joins cobblestone work?	Mean	Std. Deviation	Variance
Less than 300 Birr	1.8182	1.40130	1.964
Between 300 and 600 Birr	1.4419	.85363	.729
Between 601 and 1000 Birr	1.7895	.41885	.175
Between 1001 and 1500 Birr	2.1000	.99443	.989
Above 1500 Birr	2.0000	.00000	.000
Total	1.6588	.89380	.799

Annex 5. ANOVA Table

		Sum of Squares	df	Mean Square	F
The average amount of monthly income level of your family before the cobblestone work	Between Groups	12.680	4	3.170	4.660
	Within Groups	54.426	80	.680	
	Total	67.106	84		
Monthly average income level of your family after you joins cobblestone work?	Between Groups	18.865	4	4.716	6.794
	Within Groups	55.535	80	.694	
	Total	74.400	84		

ADDIS ABABA UNIVERSITY
GRADUATE SCHOOL OF DEVELOPMENT STUDIES
INSTITUTE OF REGIONAL AND LOCAL DEVELOPMENT STUDIES
Questionnaire to be filled by cobblestone workers and coordinators

General Direction

This questionnaire is developed to gather information on the socio-economic significance of cobblestone works in **Burayu Town**. The purpose of the study is purely for academic exercises and it is to test the socio-economic returns from cobblestone work for the road and pavement construction in the inner town. Hence, your cooperation in giving complete and relevant response to the questions contained in the questionnaire is so crucial, and the data will be used confidentially, for the above mentioned purpose. Thus, you are kindly requested to fill the questionnaire honestly and responsibly.

Note that:

- No need to write your name
- For close ended questions please mark your response by circling the letter that is correct
- For open ended questions requiring your written response please use the space provided.

Section I. Personal Information

- 1.1 Name of the Cooperative _____
- 1.2 Your position in the organization _____
- 1.3 Sex: Female Male (underline one of it)
- 1.4 Age: _____
- 1.5 Educational Level: _____
- 1.6 Marital status: Single; Married; Divorce; Widowed. (Underline)
- 1.7 Are you the head of household? Yes No (underline one of it)
- 1.8 Your family size including you; M _____ + F _____ =Total _____
- 1.9 If any other, please specify _____

Section II. The main questions

1. How long have you been since you began working on the cobblestone work?
 - A. 1 year and less than 1 year
 - B. 2-3 years
 - C. above 3 years
 2. What was your job or source of income before you join the cobblestone work?
 - A. daily laborer
 - B. farming
 - C. student
 - D. employed in private sector
 - E. sitting idle
 - F. Others _____
 3. For how long will you continue on the job of cobblestone work?
 - A. For less than 2 years,
 - B. From 2- 5 years.
 - C. From 5-10 years.
 - D. For more than 10 years.
- 3.1 Why? _____

4. Do you have a plan for the technological advancement of the cobblestone work? A. yes, B. no
- 4.1 If your answer is "yes" how do you want to improve?
A. by planting machine B. using manual tools
5. If you have a plan for technologically to advance the work, what are the tools that you are going to utilize to improve the technological advancement?

6. Are you happy by joining the MSEs for the cobblestone work?
A. Yes, I am happy B. No, I am not happy
- 6.1. If you are not happy, what is your reason?
A. The work is not consistent B. The payment is not paid timely
C. The work is not attractive D. Others
7. Why you prefer the cobblestone work than the others?
A. Because I have no choice (I am unemployed)
B. Because I like it very well
C. Others agitation
D. Because of its higher income
E. Others _____
8. What are the major challenges in the performance of cobblestone work? (Rank them).
A. Lack of training supports
B. Lack of financial supports/ inadequate support
C. Lack of coordination system
D. Shortage of raw materials
E. Lack of work site
F. If others, add some more _____
9. How would you ranking the provision of essential support to the MSEs?
A. Very good B. Good C. Medium D. Poor E. Very poor
10. If your answer of question number "9" is D or E, what is the reason to be poor or very poor?
A. Lack of supporting body
B. Lack of potential for supporting
C. Lack of integration between MSEs and concerned body
D. Lack of willingness to support
E. Others _____
11. What type of support is provided to enhance the performance of MSEs on cobblestone work?
A. Technical support B. Administrative support
C. Financial support D. Material support E. No supports at all
12. How would you examine the working nature of cobblestone work?
A. Very complex B. A little bit complex C. Moderate
D. Easy F. Very easy
13. Is there any health problem associated with the cobblestone works that you have faced?
A. Yes B. No
- 13.1. If your answer is yes, what kind of problem is it? Please explain it.

- A. There is no difference
 - B. Asphalt road need technical skillful and need higher cost than Cobblestone road
 - C. Cobblestone road need skillful person and higher cost than Asphalt road
- 26.4 In terms of employment generation?
- A. There is no difference
 - B. Asphalt road generate more employment than Cobblestone road
 - C. Cobblestone road generate more employment than Asphalt road
27. How is the prevalence of the environment to erosion due to extraction of cobblestone from the source?
- A. There is no erosion problem on the environment
 - B. It causes environment degradation due to erosion
 - C. I do not know its effect on the environment
 - D. Others _____
28. Is there any gender consideration of the employment generation schemes of the MSEs works of cobblestone?
- A. Yes
 - B. No
- 28.1 If your answer is 'yes' how? _____
- 28.2 If there is gender consideration in employment generation of cobblestone, to whom priority is given?
- A. Priority is given to male,
 - B. Priority is given to female
 - C. Equal chance is given
29. Are there any additional points that you say more?
- _____
- _____.

Thank you for your concerned and cooperation.

**ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES
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Interview questions for the heads

1. What are the major contributions of cobblestone work for the improvement of road infrastructure network of your town?
2. What are the rationales for utilizing cobblestone as a means in the provision of road infrastructure?
3. What types of support do you provided for effective performances of the cobblestone work of the MSEs?
4. What are the major achievements that you realized in using cobblestone road construction?
5. What are the major challenges in the performance of cobblestone work?
6. How many unemployed people are registered in the town?

7. What are your planned strategies of employment generation and job creation for those of unemployed people?
8. How do you select the unemployed people and organize them in MSEs to create employment? Do you have your own criterion? What is it?
9. Is there any gender consideration in organizing the MSEs for employment generating schemes?
10. Do you have training center for MSEs and for cobblestone work?
11. How many organization or cooperatives of SME are planned to train in this year?
12. Do you think that the employment generation of cobblestone work is sustainable? How?
13. For how long you allocate the budget for cobblestone work?
14. For how long cobblestone workers are working in this job? _____ Why?
15. How many people are trained in your training center? How many of them are employed? What are the main reasons for those of unemployed not to employ?
16. Is there well designed system for the management of cobblestone work and technical follow up? _____
17. How is it designed? _____
18. How many Birr are allocated for the cobblestone road construction for the year 2004 Ethiopian fiscal year?
19. Is it possible to estimate the durability of the road constructed from cobblestone?
20. If yes for how long it gives a service?
21. When we compare cobblestone road with the asphalt road, which one is more:
 - Comfortable?
 - Durable?
 - Cost efficient?
22. Which one is preferable road from asphalt, red ash, gravel, and cobblestone? (in rank)
 - In terms of cost?
 - In terms of quality?
 - Beauty?
23. Among the following road construction raw materials which one is easily available at local level?

A. Asphalt B. Gravel C. Red ash D. Cobblestone
18. From where do you bring the raw resources of cobblestone?
19. Is there any income difference or improvement up on the cobblestone workers than before?
 - If yes, how? _____
20. If one worker is the most strong than the other, how many cobble, can be produce for construction per day?
 - What is its value (in birr?)
21. How do you think the work of cobblestone road construction in terms of saving foreign currency?
 - Local resource utilization
 - Local community participation
 - Employment generation
22. Regarding to community participations, is cobblestone work play any significant role in participating the local community in socio-economic activities?
 - How?

23. How do you evaluate the cobblestone work in your town from investment point of view?
24. Is there any additional points that you say more? _____

Thank you for your concerned cooperation!

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Interview questions for construction experts /site expert**

1. How long have you been since you began working on the area of cobblestone road construction?
2. Prior to the construction of cobblestone road, how was the road network condition in Burayu Town?
 - A. Adequate, B. Inadequate, C. Moderate
3. What types of support do you provide to the MSEs of cobblestone work?
 - A. Technical
 - B. Administrative
 - C. Financial management
4. Do you have training center for micro and small enterprise participating in cobblestone work?
5. What would be the contribution of cobblestone road network in the provision of road infrastructure?
 - A. Very high,
 - B. High,
 - C. Medium,
 - D. Low,
 - E. Very low
6. With the construction of cobblestone road, what improvement of the road network has been obtained? (By rank).
 - Length added
 - Good traffic movement is created
 - Cleanness of sideway environment
 - Inner towns are improved
7. How is the consideration of drainage system while paving the street with cobblestone road?
 - It is strongly considered
 - It is not considered
 - Sometimes it forgotten
8. Which road type provides more comfort for easy traffic movement? (ranking)
 - Asphalt
 - Gravel
 - Red ash
 - Cobblestone

9. What area is given the priority while constructing the cobblestone road? (ranking)
 - Inner town
 - Highways
 - New expansion areas
 - Pedestrians
10. Is there any work place security or safety for the workers to protect from unpredicted problems that are associated with the cobblestone work?
 - A. If not, why?
 - B. If yes, what kind of problems it may arise?
11. Which one is more durable road? (Rank it).
 - Asphalt
 - Red ash
 - Gravel
 - Cobblestone
12. Which type of road construction requires higher production cost and material input than the other? (Rank it).
 - Asphalt
 - Red ash
 - Gravel
 - Cobblestone
13. Do you think that cobblestone work is good practice? _____
 - Why? _____
14. Do you think that the employment generation of cobblestone work is sustainable? How/why?
15. How do you evaluate the difference between asphalt road and cobblestone road? (Rank it).
 - In terms of construction and maintenance cost?
 - In terms of local resource utilization?
 - Beauty?
 - Investment attractions?
16. Is the Cobblestone road has any contribution in saving foreign currency?
 - If yes, how? _____
17. How do you think about environmental problem due to extraction of cobblestone from the source?
18. Which of the following road construction type need more labour? (rank it)
 - Asphalt
 - Red ash
 - Gravel
 - Cobblestone
19. What would you recommend to ensure effective performances of cobblestone work on ward?
_____.

Thank you for your concerned cooperation!

Discussion points with MSE Agency Experts

- What are the main objectives of cobblestone work in your town?
- What are the major contributions of cobblestone work for the improvement of road infrastructure network of your town?
- What types of support do you provided for effective performances of the cobblestone work of the MSEs?
- What would you recommend to ensure effective performances of cobblestone work on ward?
- To make the work sustainable, what are pre conditions to be fulfilled?
- What are the major challenges in the performance of cobblestone work?
 - Lack of training supports
 - Lack of financial supports/ inadequate support
 - Lack of coordination system
 - Lack of raw materials
 - Lack of work site
- What are the major opportunities in the performance of cobblestone work in your town?
- What are the major contributions of cobblestone work for the improvement of road infrastructure network of your town?
- Which types of local resources are easily available for road construction purpose?
 - ❖ Asphalt
 - ❖ Red ash
 - ❖ Gravel
 - ❖ Cobblestone

ሀ. ዘመናዊ ማሸን በመተካል

ለ. በኔቼ በሚሰሩ መሳሪያዎች

5. ወደ ዘመናዊ ቴክኖሎጂ ለመቀየር (ለማሻሻል) አቅደው ከሆነ ምን ምን ዓይነት መሳሪያዎችን ስራ ለይ ለማዋል አሰብዋል? -----

6. በኮብልስቶን ሥራ ለይ በመሠማራትህ ደስተኛ ነህ?

ሀ. አዎን ደስተኛ ነኝ

ለ. ደስተኛ አይደለሁም

6.1. መልስዎ ለ ከሆነ (ደስተኛ ክልሆነ) ምክንያቶቻችን ምንድነው?

ሀ. ስራው ተከታታይ ያለመሆን

ለ. ክፍያው በጊዜ አይከፈልም

ሐ. ስራው ሳቢ አይደለም

መ. ሌላ

7. ከሌሎች ሥራዎች የኮብልስቶን ሥራን ለምን መረጠው?

ሀ. አማራጭ ስለሌለኝ (ስራ አጥ ስለነበርኩኝ)

ለ. በጣም ስለምወደው

ሐ. በሌሎች ሰዎች ቅስቀሳ

መ. ገቢው ከፍተኛ ስለሆነ

ሠ. ሌላ-----

8. በኮብልስቶን ሥራ ለይ ዋናው ነገር ፈተኝ የሆነው ችግር የትኛው ነው? በደረጃ የስቀምጡ

ሀ. ስልጠና ማጣት

ለ. የገንዘብ ድጋፍ ማጣት (በቂ ያለመሆን)

ሐ. በማህበሩ መካከል የማስተባበርና የግንኙነት ችግር

መ. የጥሬ ክቃ ክጥረት

ሠ. የመሥሪያ ቦታ ዕጥረት

ረ. ሌላ ከለ ይጨምሩ -----

9. ለማይክሮና ጥቃቅን የሚደረገውን ድጋፍ ከንዴት ይመዘኑታል?

ሀ. በጠም ጥሩ

ለ. ጥሩ

ሐ. መካከለኛ

መ. ዝቅተኛ

ሠ. በጠም ዝቅተኛ

10. ለ "9"ኛ ጥያቄ መልስዎ ዝቅተኛ ከሆነ በጠም ዝቅተኛ የሚል ከሆነ ምክንያቶቻችን ምንድነው?

ሀ. ድጋፍ የሚያደርግ አካል ማጣት

ለ. ድጋፍ የሚያደርግ አካል አቅም ማነስ

ሐ. በማይክሮ ከደጋፍ አድራጊ ድርጅት መካከል ግንኙነት መጥፋት

መ. የድጋፍ አድራጊው አካል ፍላጎት ማጣት

ሠ. ሌላ -----

11. በኮብልስቶን ሥራ ለይ የመይክሮን አቅም ለማጎልበት ከየተደረገ ያለው ድጋፍ ምን ዓይነት ነው?

ሀ. የማስተዳደር ድጋፍ

ሀ. የቴክኒክ ድጋፍ ነው

ሐ. የፋይናንስ ድጋፍ

መ. የማቴሪያል (የቁሳቁስ) ድጋፍ

ሠ. የሚደረግለት ድጋፍ የለም

12. የኮብልስቶን ሥራ ባህሪዬ ከንዴት ይመዘኑታል?

ሀ. በጠም ውስብስብ ነው

ለ. በጥቅቱ ውስብስብ ነው

ሐ. መካከለኛ ነው

መ. ቀላል ነው

ሠ. በጣም ቀላል ነው

13. ከኮብልስቶን ሥራ ጋር በተያያዘ መልኩ ያገጠመዎት የጤና ችግር አለ?

ሀ. አዎን

ለ የሰም

13.1. መልስዎ “አዎ” ከሆነ ምን ዓይነት ችግር ነበር? ኮባካምን ያስረዱ።-----

13.2. በዚህ ችግር ምክንያት ምን የህል ሰዎች ከማህበሩ ተጠቁ? -----

13.3. ችግሩን ለማስወገድ ምን ዓይነት የሥራ ደህንነት መደረግ አለበት ይላሉ?
ይግለጹ -----

14. የኮባልስቶን ጥሬ ምርት አቅርቦት ከዬት ነው የሚታገኙት?

- ሀ. በአቅራቢያችን ከ 5ኪ .ሜ በማይበልጥ ይገኛል
- ለ. ከ5 - 10 ኪ .ሜ . ይርቀናል ሐ. ከ10 - 20 ኪ . ሜ . ይርቃል
- መ. ከ 20 ኪ . ሜ . በላይ ይርቃል

14.1. ጥሬ ድንጋዩን ማን ያመጣሉት?

- ሀ. የከተማው ማዘጋጃ ቤት ለ. የጥቃቅንና አነስተኛ ኤጀንሲ
- ሐ. በራሳችን ወጪ ስናመጣለን መ. ሌላ ከሆነ ይግለጹ -----

15. የመሰሪያ ቁስቁስ ለመግዘት የሰራ መጀመሪያ ገንዘብ ከዬት አገኙ?

- ሀ. ከራስ ቁጣባ ለ. ከማይክሮ አበዳሪ ድርጅት
- ሐ. የከተማው ማዘጋጀ ሠጥተውን መ. ከሌላ ምንጭ ከሆነ ይግለጹ -----

16. በኮባልስቶን ሥራ ላይ መደበኛ ስልጠና ወስደዋል?

- ሀ. አዎን ወስጃለሁ ለ. አልወሰድኩም

16.1. መልስዎ “አዎን” ከሆነ ለስንት ጊዜ የሚቆይ ስልጠና ነበረ?

- ሀ. ከ3 ወር በታች ነበረ ለ ከ3-6 ወር
- ሐ. ከ6 ወር በላይ የቆየ የስልጠና ጊዜ ነበር

16.2. ስልጠና “ ያልወሰዱ” ከሆነ ሥራውን እንዴት ጀመሩ?

- ሀ. በግል ጥረት
- ለ. መደበኛ ባይሆንም የስልጠና ሰራተኞች አሰይተውኝ ነው
- ሐ. ሌላ ከሆነ ይግለጹ -----

17. በኮባልስቶን ሥራ ምን ዓይነት ዕውቀት እና ክህሎት ነው ያከበቱት?

- ሀ. የንግድ ሥራ እንቅስቃሴን ዕውቀት
- ለ. የገንዘብ አያየዝ ክህሎት ሐ. የሥራ ፈጠራ ኸውቀትን
- መ. ሌሎች ከሉ ይግለጹ -----

18. የኮባልስቶን ሥራ ከመጀመሪያ በፊት ወርሃዊ የቤተሰብዎ የገቢ መጠን ምን ያህል ነበረ?

25.1 ብቁ ያልሆኑበት ምክንያት ምንድን ነው?

ሀ. ሌላ ሥራ ለመሥራት የሚያስችል የገንዘብ አቅም የለኝም

ለ. ሌላ ሥራ ለመሥራት መያዝ የለኝም

ሐ. ሌላ ሥራ ለመሥራት ዝግጁ አይደለሁም መ. ሌላ _____

25.2 ብቁ ከሆኑ ምን ምን መሥራት ይችላሉ? _____

26. የአስፋልት እና የኮብልስቶን መንገድን ስራን በሚከተሉት ነጥቦች ስናወደድር የትኛው የተሻለ ነው?

26.1. የአከበቢውን ህብረተሰብ ከማስተፍ አኳያ

ሀ. ልዩነት የለውም

ለ. የአስፋልት መንገድ ከኮብልስቶን መንገድ ብዙ ህዝብ ያሳትፋል

ሐ. የኮብልስቶን መንገድ ከአስፋልት መንገድ ይልቅ ብዙ ህዝብ ያሳትፋል

26.2. ከተማውን ከማስዋብ አኳያ

ሀ. ልዩነት የለውም

ለ. የአስፋልት መንገድ የተሻለ ነው

ሐ. የኮብልስቶን መንገድ የተሻለ ነው

26.3. የጥገና ወጭን አስመልክተው (የሙያ ወጭ እና የማቴሪያል ወጭ) ከመቀነስ አኳያ

ሀ. ልዩነት የለውም

ለ. የአስፋልት መንገድ ሥራ ከፍተኛ ሙያና ወጭን ይጠይቃል

ሐ. የኮብልስቶን መንገድ ሥራ ከፍተኛ ሙያና ወጭን ይጠይቃል

26.4. የሥራ ዕድል ከመፍጠር አኳያ

ሀ. ልዩነት የለውም

ለ. የአስፋልት መንገድ ሥራ ብዙ ሠራተኞችን ይቀጥራል

ሐ. ኮብልስቶን መንገድ ሥራ ብዙ ሠራተኞችን ይቀጥራል

27. የኮብልስቶን ድንጋይ ከሚወጣበት አካባቢ ለጎርፉ የመጋለጥ ጉደይ ምን ይመስላል?

ሀ. አካባቢውን ለጎርፉ የመጋለጥ ችግር የለበትም

ለ. አካባቢው ለመቦርቦር እና ለጎርፍ መንስኤ የተጋለጠ ነው

ሐ. በአከበቢው ላይ ልያደርስ የሚችለውን ችግር አለውቅም

28. በማይክሮ እና ጥቃቅን ስራዎች የኮብልስቶን ሥራ የፆታ ትኩረት የሚሰጥበት ሁኔታ አለ?

ሀ. አዎን አለ

ለ. የለም

28.1. መልስዎ አዎን ከሆነ እንዴት እንደሆነ ይግለጹልን? _____

28.2. የኮብልስቶን ሥራ በፆታ ትኩረት የሚሰጥ ከሆነ ለማንኛው ጾታ ነው ቅድሚያ የሚሰጠው ለማን ነው?

ሀ. ቅድሚያ ለሴቶች ይሰጣል

ለ. ቅድሚያ ለወንዶች ይሰጣል

ሐ. ስኩል ክድል ይሰጣል

29. በተጨማሪ መስጠት የሚፈልጉት ሀሰብ (አስተያየት) ከስ ይግለጹ _____

ሃላፊነት ተሰምተው በትክክል ስለሞሉልን ክልብ ናመሰግናለን::