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**ADDIS ABABA UNIVERSITY**

**COLLEGE OF BUSINESS AND ECONOMICS**

**DEPARTMENT OF PUBLIC ADMINISTRATION AND DEVELOPMENT  
MANAGEMENT**

**ASSESSMENT OF THE PRACTICES AND CHALLENGES OF INTERNAL  
ROAD INFRASTRUCTURE DEVELOPMENT IN BURAYU TOWN**

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**Assessment of the Practices and Challenges of Internal Road Infrastructure  
Development in Burayu Town**

**By**

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of the Requirements to the Degree of Master of Art in Public Administration  
and Development Management**

**College of Business and Economics**

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## **Declaration**

I, the under signed, declare that this thesis is my original work and that all sources used for the thesis have been duly acknowledged.

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**Addis Ababa University**

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## **Abstract**

*Cobblestone road is one of the infrastructure developments implemented in many cities of the country since 2005. Many internal roads (cobblestone in this case) are constructed jointly by the community and government participations. The roads have many benefits, i.e. creating job to the unemployed youths and helping to minimizing unemployment rate in Burayu Town in particular and the whole country at large. Furthermore, the cobblestone projects are making all the surrounding environments attractive and beautiful and the internal roads are always facilitating the overall service delivery in and out of the town. As to the researcher's observation a significant part of the cobblestone roads are not well maintained and kept as per needed. This piece of research work is tried to assess the practices and challenges of internal road infrastructure development in Burayu Town. The study was conducted adapting descriptive research design. In terms of approach, mixed method, where both quantitative as well as qualitative data are combined and analyzed. The unit of analysis for this study is Burayu town as a sample which has six Kebeles, among which Burayu Keta Kebele and Gefersa Burayu Kebele were sampled purposively, while respondents are randomly selected from residents in the selected kebeles. Data were collected through questionnaire and interview of key informants, observation of the field and critically reviewing documents, academic journals, proceedings, books, articles contributed by different authors, reports, policy documents, internet based information which contains relevant information related to the subject under the study. The findings indicated that cobblestone roads are moderately benefiting the community, who assured for benefits they have obtained. Whereas, the roads are getting damage due to other infrastructure development works by some government institutions like ELPA, Telecommunication and Water and Sewerage Authority). The community's sense of ownership has slightly improved in fear of losing the roads' quality and benefits due to damages in the roads. The roads are deteriorating because of the absence of road management together with poor maintenance during post construction. Another significant problem observed was improper ditches /resulted in water or mud overflow to the roads. Based on the conclusion, some of the recommendations are:the government at all level has to create awareness to make the community to participate on the construction of the internal roads. It is expected to mobilize the community to evaluate and monitor the roads as well, other types of infrastructures like telecommunication wire installation, water pipe that can be lined across the local roads and others should be implemented before construction, the government has to work more in raising awareness to make the community to actively participate on the construction of the roads; and also provide space and opportunity to the community and other stakeholders to participate fully in preserving, managing and maintaining the roads; as well as the community to evaluate and monitor the roads and directives that guide how to use the cobblestone roads should be in place as a legal framework or as a policy in order to save the roads from being deteriorated by any form of damages.*

**Key Words:** Cobblestone, Practices and Challenges

# CHAPTER ONE

## Introduction

### 1.1. Background of the Study

In recent years, cobblestone road creation has become one of the most successful infrastructure and job creation program in the country, with tremendous benefits for the urban poor. It has created hundreds of thousands of jobs, greatly improved urban mobility, and built collaborative relationships between communities and local authorities. The investments in cobblestone roads have also attracted international attention. In 2013, UN-Habitat awarded the Ethiopian Ministry of Urban Development, Housing and Construction (MUDHCo) with a prestigious Scroll of Honor Award for the initiative. The initiative was supported jointly by the German Development Cooperation and the Bill & Melinda Gates Foundation, which is funding cobblestone road production in eight secondary cities throughout the country. The project is being implemented by MUDHCo in partnership with the German Organization for International Cooperation (GIZ) and the German Development Bank KfW.

Cobblestone roads construction is the earliest experience of many cities in Europe, United States of America and other advanced parts of the world. Hence, using stones for paving streets is not a new idea in the world (Treskon, 2006:3). But, in Ethiopia it is the newly emerging practices since 2005. As TVETA-MoE (2014:25), the Construction Sector Capacity Building Program (CSCBP) started the Cobblestone Project in 2005 in a dual effort to create job opportunities and income for youth, and to provide attractive and long-lasting road and pavement in Ethiopian cities. Built on a principle of local resource utilization, Cobblestone projects include labor-intensive jobs like quarrying, chiseling, transporting, and paving, as well as the production of tools needed. According to MUDC (2012.), “one of the priority services selected by ULGs for improvement is improved road access through the construction of Cobblestone roads. All participating ULGs have included Cobblestone road construction as part of the prioritized Capital Investment Plans (CIPs). Cobblestone road construction is comprehensively labor intensive and requires skilled labor.

Cobblestone paved streets solve social and economic problems of the community like unplanned settlements of Oromia region in general and Burayu Town in particular, which is complicated by unplanned houses and roads. As Van Esch and Franssen (1997:3) argued, “The access roads in unplanned settlements are very poor, and are often characterized by serious flooding, large potholes and open holes (e.g. manholes) creating dangerous situations for the road users and residents. Quite often the settlements are not accessible in case of emergencies like fire or accidents. The absence of access can also hamper social and economic development as for example trucks providing supplies to small enterprises, charcoal truck, pit latrine emptier and waste collection trucks cannot enter the settlement”. According to MUDC (2012:2), Cobblestones are ease of maintenance and lifespan have a longer life span than asphalt roads. Treskon (2006:14) also argued that Cobblestones last a long time.

As to roads, the most common problem is neglecting the maintenance aspect. After building new roads at a very high cost (money) and leaving them without maintenance obviously makes them to deteriorate very quickly. If nothing is done, roads with a design life of decades can need replacing or major repair work after just a few years. Maintenance is required to be carried out from time to time to restore its condition to be close to its as constructed state. If maintenance is not carried out the road will continue to deteriorate making passage increasingly difficult, uncomfortable and expensive to road users (ERA, 2011:9). So it is very important to preserve and manage the existing paved roads which could be deteriorated because of so many reasons. Preserving this Cobblestone paved streets can also be used as a good base or foundation for asphalt in the long run as stated that even though the stones themselves may be obsolete surfacing (Treskon: 2006:13).

What so ever may be the reasons; Cobblestone roads in Burayu Town are becoming badly managed and deteriorated within few years after construction, there is bad management of Cobblestone roads development. So the main points raised here in this research paper for discussion will be issues related with the management and maintenance of the roads. Questions like what impacts do these roads have on development, what are the main reasons for the problem created and what is the role and responsibility of the local government and the participation of the community in constructing, managing and maintaining the roads, and what are the preconditions needed either to make the roads last long or to have a minimum

maintenance cost at some interval of time and some of them to be answered in the study in a slight description how the Cobblestone roads are being constructed.

The community and the local government are participating in the construction and pavement of the Cobblestones as doing in every activity of local development in a very little participation of other development actors or stakeholders. But this type of participation is not clearly seen or repeated in keeping the safety of the Cobblestone roads by developing the sense of ownership. When people have a direct hand in deciding the course of action to better their environment, they develop a strong sense of ownership that leads to their active involvement in improvement and maintenance activities (PPS, 2008:31).

As the Cobblestone road construction in urban areas is a new emerging practice in Ethiopia, there is little research conducted in relation to this topic in Oromia region in general and Burayu Town in particular. Burayu town has 38 km asphalt, 262 km gravel road and 103 km cobblestone road coverage. These changes are transforming Burayu town marketplaces into better connected, economically vibrant place. People are able to move within the Kebeles more easily, both in vehicles and on foot. Public transportation and solid waste management collectors are able to reach previously unreachable neighborhoods. Hence, the focus of this study was to be analyzing the practices and challenges of cobblestone road development in Burayu Town”.

## **1.2. Statement of the Problem**

It is obvious that Cobblestone road construction is playing a great role in bringing about social, economic and environmental benefits at the local and national level. Lots of jobs could be created for the people (Tiwari, 2011:74). It is cost-effective compared to concrete or asphalt roads, it makes towns and cities more beautiful, benefits residents and encourages tourism; is easy to maintain and has a much longer lifespan than asphalt roads. It is labor-intensive, creates jobs and opportunities for construction entrepreneurs; uses natural and local materials and does not require imported machinery; does not depend on imported oil, it does not contribute anything (temperature) to global warming (UN-Habitat, 2013:2).

Despite all the above social and economic benefits and advantages are that the Cobblestone road construction is bringing about, it is facing challenges. Cobblestone roads are not managed and

treated well and as such they start deteriorating in many parts of the city in general and the Burayu Town in particular. The community is also calling the government for taking action on the roads which are deteriorating over time after construction.

When the project for this particular activity is designed, launched and started implementation, there has been said or planned nothing about the future fate of the roads, their management and maintenance. The local government also focuses only on the process of and the result from the construction in the light of creating jobs for the unemployed people, making the city clean and beautiful and, thus, focuses only on the report of the performance of the implementation (plan and actual) of the construction in relation to the existing unpaved earthen road. In principle, however, if any road is managed badly and not maintained periodically it will inevitably be deteriorated to the extent either difficult to maintain or causes to expend a high cost or reconstruct it. This is also true for the Cobblestone paved roads and Burayu Town is no exception.

The other problem is reluctance of the local government as the community in any social meeting always poses a question towards the government for not taking any measure on the cobblestone roads as they are deteriorating within few years after construction. And of course the government has the premier responsibility for everything which happens on these roads. And their lack of participation on the part of the community and other stakeholders in preserving; managing and maintaining the Cobblestones paved streets even though they highly participated in the construction by contributing in different ways. Cumulatively, these problems result in either additional resources or a complete loss of the existing resources. With all the above, this study will assess challenges and prospects of internal road infrastructure development and analyze the general opinion and understanding of stakeholders towards the cobblestone paved roads.

### **Identified Research Gap Observed by the Researcher**

As the Cobblestone road construction in urban areas is a new emerging practice in Ethiopia, there is few research was conducted in relation to the management and maintenance of Cobblestone roads, the role of the community in preserving and managing them in Addis Ababa in general and Burayu Town in particular. Even though the ways, activities and costs for maintaining some types of roads are different, the basic principles, advantages and benefits are

the same to all including the Cobblestone paved roads. So all the above mentioned social and economic advantages and benefits the Cobblestone roads construction bring about on the one hand, and the absence of good management, maintenance and improper utilization of the roads on the other hand, are the main motives and premises for this paper to focus on the Cobblestone road construction and related issues.

The above problems invited the researcher to carry out a study on analyzing the practices and challenges of cobblestone road development in Burayu Town”. To achieve this purpose, the researcher specifically formulates the following basic research questions:

To address or to meet the research objectives, the research focuses on the following basic questions:

1. What are the major features of internal road infrastructure development in Burayu Town? And how can the current status of the paved roads be described?
2. What are the major challenges affecting cobblestone construction in Burayu Town?
3. Who are the major stakeholders and what major roles do they play in cobblestone roads construction, maintenance and management in Burayu Town?

### **1.3. Objectives of the Study**

#### **1.3.1. General Objective**

The general objective of this study is to analyze the Challenges and Prospects of Internal Road Infrastructure Development: The Case of Burayu Town.

#### **1.3.2. Specific Objectives**

The study tried to address more specific objectives as follows:

1. To assess the major features of internal road infrastructure development in Burayu Town and examine how the current status of the paved roads are described?

2. To identify the major stakeholders and the roles they have in cobblestone roads construction, maintenance and management in Burayu Town.
3. To identify the key challenges faced in construction and maintenance of cobblestone roads construction in Burayu Town.

#### **1.4. Significance of the Study**

Nobody may have information at what status these cobblestones roads construction are as their condition was not assessed and evaluated. Once constructed, it is not clear what challenges will be observed in the roads. What gaps should be bridged or filled and what assignments should we take next time from the past experience of this Project. There is not also any organized document of an empirical assessment and evaluation of the overall condition of the cobblestone roads at the national, town and district level. Hence, this paper will intend to identify and analyze the Challenges and Prospects of Internal Road Infrastructure Development: The Case of Burayu Town.

#### **1.5. Scope of the Study**

The researcher has found that it is very important to delimit the scope of the study to a manageable size in order to investigate the issue thoroughly. Oromia Regional State is classified in to twenty Zones; out of these Zones the researcher selected Burayu as the Zone Town purposely. This is therefore; the research was confining only to in a single Town (Burayu) for the sake of in-depth analysis with genuine investigation on challenges and prospects of internal road infrastructure development: The Case of Burayu Town”.

#### **1.6. Organization of the Study**

This study was organized and comprises into five chapters. The first chapter consists of an introduction which consists of background of the study, statement of the problem, objectives of the study, significance of the study, delimitation of the study and definition of terms. The second chapter discusses about the review of related literature. The third chapter deals with the research design and method of the study. The fourth chapter deals with the presentation, analysis and interpretation of the data. The fifth chapter deals with the summary of findings, conclusions and

recommendations of the study. Finally, references and a set of appendices were included that contain the interview guide and questionnaire that used to collect primary data for this work and other supplementary documents of the study.

## 1.7. Operational Definitions

**Cobblestone:** is a natural building material based on cobble-sized stones, and is used for pavement roads, streets, and buildings. (Wikipedia, the free encyclopedia)

**Infrastructure:** is the fundamental facilities and systems serving a country, city, or other area,<sup>[1]</sup> including the services and facilities necessary for its economy to function. (Wikipedia, the free encyclopedia)

**Practices:** the actual performance of an activity in a real situation. (Wikipedia, the free encyclopedia)

**Challenges:** something needing great mental or physical effort in order to be done successfully, or the situation of facing this kind of effort: (Cambridge English Dictionary).

**Burayu Town:** place where people live and work that is smaller than a city and taken as a sample unit for this research undertaking. (Wikipedia, the free encyclopedia)

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1. Introduction**

#### **2.2. The Concepts of Internal Road Infrastructure Development**

##### **2.2.1. Cobblestone Development**

According to the Encyclopedia Britannica (cited in Tiwari, 2011:73), Cobblestones are stones that are frequently used in the pavement of early streets. 'Cobblestone' is derived from a 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' streets. "Cobblestone" itself (Treskon, 2006:3), is a messy term. Strictly defined, it refers to a rounded water-worn stone used for paving streets. However the term often refers to any number of stone paving types.

ERA (2011:105) defined Cobble Stone (Dressed stone) - as Cubic pieces of stone larger than setts, usually shaped by hand and built into a road surface layer or surface protection. According to BASMAA (1999:53), Cobbles are larger granular materials and their sizes generally range from approximately 6" to 24" diameter and are available in a variety of stones and colors. Cobbles are useful as a permeable pavement in areas where little traffic is desired, such as under large trees, or in hard to maintain areas such as median islands. Cobbles have similar construction characteristics as gravel, except they are somewhat more labor intensive to install because each cobble must generally be set individually (ibid). Cobbles, according to OGUT and KUTLUHAN (n.d.:2), are by definition naturally occurring water worn stones of a size suitable for paving. A Cobblestone pavement consists of such stones, between 125 and 250 mm deep and rather less in length, set individually in a sand bed about 150 mm thick. Stones are laid to a random bond, rammed into place and covered with a 10 mm layer of sand to work into the joints under the action of traffic.

### **2.2.2. Nature of the Cobblestones Road Development**

The nature of the Cobblestone roads normally depends on the size of each Cobblestone, the status, and position of laying the stones on the already prepared sub base. If a single Cobblestone is displaced (scattered) from the normal position it is put, there is a possibility for the whole Cobblestones to displace. Its nature enables it to simply deteriorate or destruct if it is not constructed in quality as the stability of one Cobblestone in its place depends on the stability of the other. The edge or the end of the roads which has a connection or a join with asphalt or earthen road can simply be destroyed unless strongly fixed with a cement or concrete. The curve stones should also be properly erected, stuck or fixed by cement and other materials in order for it to hold the Cobbles. If the joint area between the end of the Cobblestone roads and either asphalt or earthed road is not constructed with the help of big stone and cement, it will simply deteriorate and makes other Cobblestones to scatter as practically observed in the field in

### **2.2.3. Transforming Local Economies with Cobblestones**

Cobblestone paving makes perfect sense for Ethiopia's burgeoning urban roads. It is labour-intensive, creating jobs as well as opportunities for construction entrepreneurs. It uses natural and local materials that are plentiful. It is also cost-effective compared to concrete and asphalt roads, easy to maintain and has a much longer lifespan. Moreover, it is easy to replicate elsewhere, because the investment needed is relatively small and production skills are easy to learn.

Initiated and coordinated by the federal government as part of its Leveraging Urban Spending to Maximize Benefits of the Urban Poor (LUSUP) initiative, the cobblestone project is implemented by local communities themselves. Community representatives accompany city administrations to practice the job tender procedures, and they are assisted in monitoring the construction quality. Training centers ensure that the competing micro and small enterprises acquire the skills needed for chiseling, paving, and project management – key capacities if the cobblestone project is to turn temporary job creation into permanent employment. Citizens monitor and oversee the cobblestone road construction, fostering strong community ownership.

These changes are transforming Ethiopia's city marketplaces into better connected, economically vibrant places. People are able to move around cities more easily, both in vehicles and on foot. Public transportation and solid waste management collectors are able to reach previously unreachable neighborhoods. Flooding has diminished during the rainy season, and residents have a much healthier environment than with the old dirt roads. Small enterprises are opening for business, and investment in private homes is rising.

#### **2.2.4. Cobblestone Paving**

Paving roads with cobblestones began in Egypt more than 3,500 years ago. From then on, cobblestone pavements were used worldwide in cities such as Berlin, New York and Paris. In Ethiopia, the Germany International cobblestone project was introduced in 2006 as part of the university capacity building programs. Adama was the first city to train workers in the different processes of producing and paving with cobblestones. In one year, the German cobblestone experts have trained more than 5000 people with whom they have paved 20,000 square meters in Adama city (UCBP, 2008). The initiative falls under construction sector of micro and small enterprise. It promotes using of local resources in a very labor intensive process to pave roads, saving the foreign currency needed to purchase the components of asphalt and at the same time providing jobs to large numbers of Ethiopians.

According to UN-Habitat (2013) report on Cobblestone initiative in Ethiopian experience, Cobble stone paving is a labor intensive initiative that creates substantial job opportunities in different activities such as quarrying, chiseling, transporting and paving. Employment in the cobble stone sector is open to all including the disabled, and focuses largely on unemployed young people and women; it has given a chance to establish a lot of micro and small enterprises on manufacturing and other construction sectors. In the last few years in capital city of Addis Ababa alone about 2,240 Micro and Small Enterprises were established and engaged in the cobblestone road construction. Among them 254 Enterprises were engaged under cobble stone paving sector. The project covers all sub-cities of Addis Ababa and includes pedestrian and vehicle roads, condominium Villages, recreation areas and parks, organizations and residential areas.

The initiative improved urban roads coverage and meets the country's road need at a cheaper cost by using natural and local materials with no requirement for imported machinery. In terms of roads constructed or paved (as per the World Bank standard of 7 meter width) between 2008-2012/13 more than 2,202 km of cobblestone roads, taxi terminal, feeder roads and public squares have been built. This provides safe walk way, reduction of dust and mud; reduce traffic jams, and improved marketing linkage of related and unrelated business along the value chain. In the employment creation process, the initiative helps beneficiaries by generating income for daily consumption and savings.

This sector also Improved Saving Capacity and Promote the Operators to Medium Level Enterprise .The aim of the initiative was not to retain the operators in this sector forever. It aims to improve the culture of saving of the operators and enables them to transfer to the other productive sectors of the economy such as manufacturing, construction, textile and others. As indicated in the MSE development strategy document the operators are expected to save 10% - 20% of their income and hence, the operators have saved millions of birr and have been enabled to establish medium level enterprises (MUDCO and UN-Habitat, 2013).

### **2.3. Internal Road Infrastructure and Access to Job Opportunities**

The urban poor have benefited tremendously from the initiative, especially youth and women. Accordingly, 489,000 new jobs created between 40-45 percent of the jobs have been filled by job seekers. Many participants are previously unemployed youths, who have now obtained new skills and livelihood strategies as part of the project. This employment has helped given them a sense of empowerment and community pride. "The women in the communities we spoke to were often the most vocal in their appreciation for the project, which provided them with additional income, skills, and helped free up time from the 'double burden' of unpaid care work in the home," said Nicola Demme, Programme Manager of the GIZ LUSUP Project.

Demme visited several work sites this past February with a Cities Alliance team who is providing technical advisory services and grant portfolio management oversight to the Bill & Melinda Gates Foundation grants in the country. Peter Maats of the German Development Bank KfW was also struck by women's enthusiasm for the project. "One woman in Yirgalem city expressed delight that she didn't have to rely on her husband as much for livelihood and income

now that she had participated in the project, and that her daughters also wanted to be trained in similar skills,” he noted.

### **2.3.1. Urban Roads Development**

Even though there are different types of urban local roads or streets depending on the functions they provide and the way they are constructed and maintained, for the purpose of this paper urban roads or streets refer to those roads constructed with Cobblestones. Streets are defined as public thoroughfares in a city or town, including curbs, gutters, and sidewalks on one or both sides and Roads are defined open, general public ways for the passage of persons and vehicles (EOA, 1996). In urban areas, roads generally comprise the most important part of the transport infrastructure system.

Access to roads by people depends chiefly on the availability of roads, their condition, design and the means by which people can reach them and travel on them (Leyland and van Esch, n.d). As Van Esch and Fransen (1997:3) stated, “The access roads in unplanned settlements are very poor, and are often characterized by serious flooding, large potholes and open holes (e.g. manholes) creating dangerous situations for the road users and residents. The absence of access can also hamper social and economic development as for example trucks providing supplies to small enterprises, charcoal truck, pit latrine emptier and waste collection trucks cannot enter the settlement”.

In recent years new street standards have been gaining acceptance that meets the access requirements of local residential streets while reducing impervious land coverage. These standards generally create a new class of street that is smaller than the current local street standard, called an “access” street. An access street is at the lowest end of the street hierarchy and is intended only to provide access to a limited number of residences.

### **2.3.2. Road Infrastructure and Construction Projects**

Roads has a key role to play in transporting people goods physically; scholars researched, cobblestone roads which are the one indigenous material based, labour intensive, environmentally sustainable and viable infrastructure, also one of the best practices in the country adopted as a preferable mode of infrastructure provision policy specially in the interiors

of the Ethiopian cities. Challenges, opportunities, employability potentials of cobblestone roads and its role in poverty alleviation are largely analyzed by the scholars (Ahmednur 2009 and Adem 2011a,).

Additionally, provision and management of road Infrastructure, its integration with other infrastructures, role in city development, performance of Ethiopian road fund in road maintenance, community participation in planning, construction, maintenance, road safety, economic role of roads, are some other issues which are considered for research (Dereje 2009 and Asnake 2011).

## **2.4. Internal Road Management and Maintenance**

According to IBRD (2002), Management is a cyclical process involving the formulation of goals; planning and programming; implementation; operation and maintenance; monitoring and evaluation; and application of information derived from monitoring to planning and operational functions. Road management is defined as the process of maintaining and improving the existing road network to enable its continued use by traffic efficiently and safely, normally in a manner that is attempting to optimize the overall performance of the road network over time. But for the purpose of this paper management of roads will not be discussed in detail with all its functions of planning, programming, preparation and operation as this focuses mostly in high ways and/or ring roads.

Management of roads in this case is administration, managing and preserving of the road even though the management functions are included in this aspect to administer them and to indicate also whose responsibility is it also and so the management and maintenance concepts are only for the Cobblestone roads to apply.

## **2.5. Internal Road Infrastructure Development and Community Participation**

Participation can be defined differently by different scholars and/or organizations for different purposes even though the meaning of the definition broadly remains the same. But to be specific for the purpose of this paper, participation in infrastructure service management is defined by IBRD (2002:32) as “a process whereby people-as consumers and producers of infrastructure

services and as citizens-influence the flow and quality of infrastructure services available to them. Participation is based on voluntary relationships between various actors, which may include government institutions, individual infrastructure users, community-based organizations, user groups, private enterprises, and non-governmental organizations.”

One of the key objectives of participation is to incorporate local knowledge and preferences into the decision-making processes of governments, private providers, and donor agencies. When potential beneficiaries are able to make key decisions, participation becomes self-initiated action—what is known as the “exercise of voice and choice” or “empowerment.” Participation is expected to lead to better-designed development projects, more effective service delivery, and improvements in the targeting of benefits (IBRD, 2013:15).

### **2.5.1. Road as an Asset**

Roads ensure mobility – in your neighborhood, your municipality, the region or beyond – and enable much more. The quality of the road network affects almost everybody in daily life. Therefore users, residents, consumers, employees, businessmen or taxpayers, we all should care that roads are managed efficiently and are able to deliver good service to society (ERF, 2014:6).Roads are one of the major financial community assets and provide large benefits to the society. But, due to poor asset management, many road networks are in danger and Road Asset Management provides decision makers with the necessary tools for efficient and sustainable management of roads (ibid:4-5).

### **2.5.2. Maintenance of Roads**

Once physical improvements have been made to a place, they need to be maintained. They need to be cleaned and scrubbed and shined. If they break, they need to be repaired, and if they show wear, they need to be spruced up. It also helps to have a visible presence on hand to help promote a place’s security (Project for Public Spaces, 2008:30). These are the key elements of any management program, which usually involves joint funding and cooperative efforts of the private sector and city governments. Although the nuts and bolts of management programs are maintenance, sanitation and security, good management means much more than that (ibid). Road

maintenance includes all activities carried out with the intention of maintaining the functions and to maintain the properties for which the road was designed (ibid, 2011:15).

Urban Road maintenance is one of the most important components of the entire road system and should be accorded due importance (Shah, Jain &Parida, 2014: 238). Roads are among the most important public assets in many countries. Road improvements bring immediate and sometimes dramatic benefits to road users through improved access to hospitals, schools, and markets; improved comfort, speed, and safety; and lower vehicle operating costs. For these benefits to be sustained, road improvements must be followed by a well-planned program of maintenance. The purpose of maintenance is to ensure that the road remains serviceable throughout its design life and the main two reasons of its importance are: (i) Prolongs the life of the road by reducing the rate of deterioration, thereby safeguarding previous investments in construction and rehabilitation, and (ii) Sustains social and economic benefits of improved road access (ILO, 2013).

According to the IBRD (2002:77-78), Cities usually have a massive investment in their road systems, which are often very poorly maintained and World Bank–funded projects typically show very high returns on maintenance expenditures. Yet there is a persistent tendency to underfund maintenance. Much of the problem of road maintenance is rooted in its economic and institutional aspects. Inadequate incentives and weak accountability derive from the characteristic separation of responsibilities and control between the providers and users of roads. Unlike most other types of infrastructure, roads are neither built nor maintained by those who use them to market output or services (WB, 2004). The cost of a road construction over its service life is a function of the design, quality of construction, maintenance strategies and maintenance operations. Unfortunately, designers often neglect a very important aspect which is the possibility to perform future maintenance activities. (DFID (2003: i) also supports this idea by stating that “the maintenance of communal resources and particularly transport infrastructure has been neglected in the past and a cycle of re-construction or rehabilitation has evolved”.

According to van Rijn (2006:4), there are different types of maintenance: routine maintenance, periodic maintenance, reconstruction and emergence maintenance. As the manual of MLGPC (2008), road maintenance activities can be classified as Routine Maintenance, Recurrent

Maintenance, Periodic Maintenance and Urgent Maintenance based on the nature of each activity and the frequency at which they should be carried out.

As clearly indicated in the bulletin of the Addis Ababa City 15 year's journey of the road development (AACRA, March 2014: 95), annual capital budget is always allocated for the construction and maintenance of the asphalt roads, gravel roads, pedestrian walk way and other different types of projects. But for the Cobblestone roads, budget is allocated only for construction. Handling, good management and maintenance of these roads are ignored.

### **2.5.3. Community Participation and Commitment**

Different scholars argue for community participation in different local development initiatives in general and in the overall processes of constructing, managing and maintaining of roads specifically. The World Bank (1994) defines participation as “A process through which stakeholders’ influence and share control over development initiatives, and the decisions and resources which affect them.” Communities maybe involved in the planning, management, implementation and maintenance of public infrastructure. Van Esch and Franssen (1997:7) also clearly stated that Communities may fully participate in the planning, construction and maintenance of public infrastructure, or may fully manage only some of these activities. Of the two, community management has the significant advantage that it promotes the feeling of local ownership, which is an important motivator for local maintenance.

They (ibid) added also that the Community management requires commitment from the community, which is most likely if the community directly benefits from the activity. For example: construction and maintenance of a road within the boundary of the community specifically benefits the community, while many people benefit from a road connecting two villages. The community will thus not be very committed to construct and maintain the road between the two villages, since it is not “their road”, while they would construct and maintain a road within their boundary. Local participation in the final stage of maintenance and operation of the created assets may provide the only feasible solution to sustaining the infrastructure investments.

Hence, involving communities in decision-making will lead to better decisions being made, which are more appropriate and more sustainable because they are owned by the people themselves. Participation can reduce the risk of project failure and the cost of the project.

Participatory development programs usually invest a good deal in building community infrastructure. The argument for doing so is twofold. First, lack of adequate infrastructure—connector roads, wholesale markets, irrigation channels, electricity, school buildings, sanitation, and the like—significantly constrains prospects for development, and this lack is far more acute in the poorest communities. Second, it is expected that devolving responsibility to the local level will produce projects that are not only better aligned with the preferences and needs of final users, but are also of higher quality, and more likely to be well maintained.

Participation enhances user "ownership" of facilities, thus helping to ensure fuller and more efficient use, better maintenance and more reliable operation (IBRD, 1996:1). Ideally, participatory programs are expected to work with communities to ensure need, feasibility, and adequacy of scale; to monitor the project over the construction cycle; and to create systems for project maintenance. Most programs require some form of community co-financing as a mechanism for inducing greater community engagement and "ownership" of the project. Some also require upfront community commitment of resources for project maintenance. According to PPS (2008:31), when people have a direct hand in deciding the course of action to better their environment, they develop a strong sense of ownership that leads to their active involvement in improvement and maintenance activities.

According to IBRD (1996), participation is considered to be a means for achieving other objectives, such as cost reduction in the construction of new facilities or improved maintenance of completed facilities and it is also considered as an end in itself. Hamilton (1992) cited in SahebZadeh and Ahmed, 2010) supports or advocates this idea by arguing that participation as a 'means' ensuring local people's cooperation/collaboration with externally introduced programs or processes to facilitate the effective implementation of such initiatives and to achieve a set of objectives; and participation as an 'end' the empowerment of people to take greater responsibility for their development through their acquisition of skills, knowledge and experience.

Community Based Organizations can be a partner in constructing and maintaining (small scale) infrastructure. International experience suggests community contracting as a mechanism to involve CBOs in the actual work (Van Esch and Fransen, 1997:11-12).

Maintenance of infrastructure should be addressed from the start of the project, by involving all relevant parties and by providing training. Organizational structures, policies and laws also need to be adjusted to suit the local situation. By-laws may for example allow CBOs to obtain funds for maintenance from the local population (ibid. 12).

#### **2.5.4. The Importance of Local Government Responsibility**

A focus on the local goes beyond questions of organizational scale and efficiency to the fundamental question of who is responsible for local development and how this responsibility can and should be institutionalized (Helling, Serrano & Warren, and 2005:12). People living and working affirm their responsibility by making the decisions, mobilizing and managing the resources, organizing the collective action, delivering the services, and ensuring the accountability of officials and organizations that contribute to local development. Without this commitment to responsibility by local actors, desired economic and social development will remain dependent on decision-making and management from above (ibid: 12-13).

The operational framework for planning and implementing ULGDP investment projects will be through a consultative process with the appropriate stakeholders at the local government level. At the city level, the Mayor's office will be responsible for the overall performance of the ULG especially regarding planning, financial management, and infrastructure service delivery (MUDC, 2012). According to UNCDF(2005: 4), "infrastructure is likely to produce intended outcomes with the involvement of local stakeholders (primarily local governments) and the private sector: In fact, empirical evidence shows that infrastructure investment is particularly effective when local stakeholders are fully involved in the decision-making process and in the management and the maintenance of the infrastructure."

The importance of local government, as Atkinson (2002:3) stated, is based on several key factors. Firstly, local government is intrinsically multi-sectorial. It is the only sphere of government that has the mandate to bring together a variety of sectorial issues within one

developmental policy, program or project. Secondly, local government is 'closest to the people'. But local governments have weaknesses. According to UNCDF (2005: 6), one of the weaknesses is that they have inadequate human, financial and logistic resources and local government administrative staff usually lacks basic technical and managerial skills and this may have a direct impact on the quality of public service.

## **2.6. Historical Background of Cobblestone Development**

As the practices and concepts related to Cobblestones roads which were experienced in early nineteenth and late twentieth century in different cities of Europe, United States of America and Latin America, there is a lack of literature review for this topic. And how the Cobblestone road construction was started in Ethiopia is discussed in detail as a review under this title though there is also a lack of related literatures. Despite this, the general principles, commonly accepted concepts to the topic and the historical background of these types of roads are discussed below.

### **2.6.1. The Beginning of Cobblestones**

The first record of stone paving dates back to 4000 BC in Assyria and by 2000 BC, flagstones were being used to pave village streets. Cobblestones were the traditional method of stone paving, being uncut and often water-worn stones or large pebbles about 150mm in size. Later hand-cut stone blocks were introduced (CMA, 2009:4). The Cobblestone road construction was practically implemented early in the eighteenth and nineteenth centuries in most of the cities of Europe, United States of America and some of the cities in Latin America. By the end of the nineteenth century, street pavement was synonymous with modernity. Municipal authorities around North America struggled to improve not only the health and appearance of their cities, but also the movement of vehicles (Williams, 2013:20).

The development of a specific form of road stone could (and would) be cited as an exemplar of rational Positivistic progress: by 1900, a very specific shape and type of Cobblestone had emerged as best suited to urban traffic throughout North America and Europe (Treskon 2006:2) . And Cobblestones played a central role in the urban environment at the turn of the 20th century. The size, layout, and even spacing between these stones all had developed so as to increase their

general utility. However, Cobblestone streets were already being paved over later on by asphalt and other similar pavements throughout cities (ibid: 10).

### **2.6.2. Introduction of Cobblestone in Ethiopia**

Some argue that Cobblestone Pavement is not really a new concept, even for Ethiopia, where the technology was used over 100 years ago as ECBP (cited in Azeb, 2011: 16). CPCO (June, 2011) also described in its document in support of this that Cobblestone in Ethiopia was first introduced by the French experts some 100 years ago during the construction of Ethio-Djibouti rail way. Beyond this fact however, this construction could not show any progress for a long period of time, and recently, the idea of Cobblestone has started again in different areas of the country in collaboration with the German Technical Cooperation of Engineering Capacity Building Program (ibid).

The Construction Sector Capacity Building Program (CSCBP) started the Cobblestone Project in 2005 in a dual effort to create job opportunities and income for youth, and to provide attractive and long-lasting road and pavement in Ethiopian cities. Built on a principle of local resource utilization, Cobblestone projects include labor-intensive jobs like quarrying, chiseling, transporting, and paving, as well as the production of tools needed (TVETA-MoE, 2014:25).

As UN-Habitat (2013:4) described in its document, Cobblestones technology was introduced by the Mayor of Dire Dawa following a visit to France.

It is only recently (2008) that paving streets with Cobblestone was introduced to the rest of Ethiopian cities. In 2008 the initiative was started in Adama Town as a pilot and up scaled to 19 World Bank supported ULGDP Towns and further spread to 140 regional cities and towns. And in terms of roads constructed or paved (as per the World Bank standard of 7 meter width) between 2008-2012/13 more than 2,202 km of Cobblestone roads, taxi terminal, feeder roads and public squares have been built (ibid: 5). Addis Ababa, as a capital city of the country, is also the one which is implementing the Cobblestone road construction in its all Sub-Cities. And Yeka is also the one which is covering almost most of the earthed roads with Cobblestone in all the *Ketenas, Kebeles* and *Woredas*.

## 2.7. Lessons Learned

The cobblestone project has valuable lessons for other countries interested in pursuing a similar approach. They are:

❖ **Investing in community mobilization and ownership is critical for strong monitoring and quality control.**

Community groups in many of the communities, including Yirgalem Town, valued the benefits to the local economy brought by the new road so much that they voluntarily carried out quality assessments and partnered up with the city administration to monitor the construction progress. When substandard stones were identified in the road, these community committees ensured that the stones were replaced.

❖ **Sustaining community participation requires capital investment in cities.**

It is extremely difficult to sustain community mobilization efforts or municipal government interest in participatory planning if the processes are not followed by capital investments. Focusing on the linkage between planning, community mobilization and practical project implementation helps to ensure sustainable community involvement and government receptiveness.

❖ **Strengthening the capacity of national staff supports project sustainability.**

By balancing resources to build national staff capacity, the project has been able to move beyond the grant lifecycle and is on its way to becoming institutionalized.

The Cities Alliance has a growing portfolio in Ethiopia, which has been a member since 2006. The partnership has supported the establishment and operation of the Ethiopian Cities Network, the development of an integrated urban database, and a State of the Cities Report, among others. Ethiopia has also been a key player in the process of formulating a Cities Alliance Africa Strategy, hosting the initial meeting to in Addis in March 2013. The relationship is expected to strengthen even further in coming years, as Ethiopia has expressed interest in becoming the next Cities Alliance Country Programme.

## **2.8. Sustainability of Urban Local Roads**

According to (IFRC, 2012:47-48), it is important to integrate the principles of sustainability from the earliest stages of (re)construction in order to:

- ❖ Build on local knowledge and utilize local materials for rehabilitation and (re)construction where appropriate
- ❖ In the event where local communities are to operate/maintain the infrastructure, they should be involved in the project cycle from the onset and their voices heard.
- ❖ Increase communities and local authorities' knowledge and capacity on how to operate and maintain the infrastructure that they will eventually take over

Implementing sustainable urban streets can create more livable communities. With amenities and attractions closely located, individuals are more likely to utilize alternative mode choices such as walking, biking or transit, which leads to improved health of individuals and the environment. Total vehicle miles traveled are reduced and less land needs to be developed because of a greater population density. Streets busy with pedestrian and bicycle traffic are safer and strengthen a sense of community (Bevan et al, 2007:4).UN-Habitat (2013:12) stated that Simple technology, local resource utilization, low maintenance costs and labor-based technology are key factors in the sustainability of Cobblestone roads.

Cobblestone roads are economically and financially sustainable. The increasing share of women in Cobblestone road construction contributes to gender equality and thus to the social sustainability of the initiative. By using local natural resources - stones -the initiative effectively contributes to reducing dependence on asphalt (a non-renewable energy). Other factors of sustainability are also very much in play: Cobblestone roads are well known for their durability. In many developed countries they have lasted for hundreds of years and many of them are tourist attractions (ibid).

## **2.9. Review of Empirical Research**

Cobblestones last a long time. This durability means a couple of things. One, they are difficult to get rid of. Two, they can be reused and refit a number of times and into a number of places. The

drawback of this durability is their expense (McCluskey ( 1997). Stone paving blocks had always been expensive; even when common in the 19th century, they were the highest cost surfacing material, even if their maintenance costs were lower than wood or asphalt (Gillmore 1976). Today, given the widespread use of brick and other aggregates as paving stones, the market for actual granite blocks is considerably smaller. They are a niche product, and are not created new but salvaged from existing roads that are being torn up.

Because of the durability of the cobblestone, it retains a physical link with the past, even when taken out of its original context. Some companies specialize in reclaiming antique stones and reselling them to private or public consumers looking for an “old world look”. One business, probably taking this historical linkage to its limit, claims that the granite stones salvaged from various Midwestern (the business is located in Iowa) cities “were used as ship ballast on ships traveling from Europe over 200 years ago (Gavin Historical Bricks)!” The very anonymity and durability of the cobblestone makes this claim almost plausible. Apparently, the historicity of the cobblestone in the Midwestern city is not enough – it has to be linked back to Europe to give the stone more gravitas and also helping to explain the continuing terminology of “Belgian” blocks.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

In this chapter, the method of the research, source of data, sample and sampling techniques, data gathering instruments, data collection procedure and method of data analysis are intensively presented.

#### **3.2. The Research Method and Design**

Descriptive survey method was employed in this study with the assumption that it could enable the researcher to reveal the challenges and prospects of internal road infrastructure development: In selected Kebeles of Burayu Town. Moreover, this method is appropriate because it helps in obtaining large variety of data related to the problem under the study. To this end, quantitative and qualitative (mixed method) research designs was employed to collect and analyze the data. Employing the mixed approach enables the researcher to look from different perspectives and the context based on practice from participants view. This method is chosen with the assumption that it helps to have data as it exists and to gather information related to the problem under study.

##### **3.2.2. Sources of Data**

Both primary and secondary sources of data were used in this study. The primary sources of the study were leader from community participation development agency, leaders from the Burayu Town, leaders from the Woredas, Officers and Kebele administration, Officer from cobblestone project coordination office, some informants from pedestrian and some with cars and local development committee members were considered as the major sources of the primary data.

Secondary sources included in this study were: relevant books, academic journals, proceedings, books, articles contributed by different authors, reports, policy documents, and internet based information which contains relevant information related to the subject under the study.

### 3.2.3. Sample and Sampling Techniques

The total numbers of Zonal Towns in Oromia regional state are 20 (twenty). From these Zonal towns the researcher interested in Burayu Town because the researcher has deep experience of the many parts of the Town.

Moreover, the researcher has preferred to work on the cobblestone projects in two Kebeles in Burayu town. These are Burayu Keta and Gefersa Burayu Kebeles found in Burayu Town. Hence, purposive sampling was employed in the selection of Kebeles within Burayu town. The main reason behind this selection is familiarity and convenient access of information relevant to the study. Besides, cobblestone road development is relatively better in Burayu town than other surrounding Zonal towns.

Manageable sample sizes of households (74) were participated in this study by filling and responding to the survey questionnaire. They were identified with systematic random sampling technique and other informants for the interview were selected purposively. Using systematic random sampling technique gives each of the population an equal chance of being included in the study.

**Table 1 Total Population and Sample Respondents**

No	Respondents	Total Population	Sample household respondents
1	Burayu Keta Kebele residents	5000	37
2	Gefersa Burayu Kebele residents	7000	37

**Source:** Burayu Town Municipality Office

### 3.2.4 Data Collection Instrument

Interview, observation and survey questionnaire were employed to collect data from respondents. The data was collected mainly from primary sources through Interview, observation and survey questionnaire which enables the researcher to gain genuine information.

In-depth independent interview sessions were held with leader from community participation development agency, leaders from the Burayu Town at Wereda and kebele level, Wereda and kebele level officers, officer from cobblestone project coordination office, some informants from pedestrian and some with cars and local development committee members.

#### **3.2.4.1 Questionnaire**

The questionnaire was used to collect data from Burayu Town Residents. The questionnaire consisted of both close and open ended questions. Due to this, five pages well-articulated questions prepared and used to collect pertinent information about the Practices and Challenges of Cobblestone Road Development in Burayu Town

The questionnaire items was prepared in English and then translated in to Oromiffa language which is known to be the working language of the Oromia region in general and for Burayu Town in particular. Translation of language in to the working language helps to avoid communication and misunderstanding of the essence of the questions. The questionnaire has six sections.

#### **3.2.4.2 Interview**

Semi structured interview which is the most common type of interview in social research was used to collect data because this process allows the researcher to gain insights into others perspectives about the phenomenon under study and it is particularly useful for ascertaining respondent's thoughts, perceptions, feelings, and retrospectives account of events.

Dawson (2002). Marriam (1998) further explained that “interviewing is necessary when we cannot observe behavior, feelings, or how people interpret the word around them. Interview was conducted leaders of the Burayu Town Administration office, Officer from cobblestone project coordination office, technician from Oromia Roads Authority, and local development committee members

#### **3.2.4.3 Observation**

Observation was another data gathering tool that helps the researcher as an eye witnesses to the

situation. The major points observed by the researcher during the survey period was, Cleanliness of the ditches, structural accuracy of the paved road, the drainage pattern, and the like. In addition, observation can help to consolidate the research with different techniques and to know what the situations look like in real life practices of the cobblestone road development.

### **3.2.5. Procedures of Data Collection**

In order to gather the necessary data, a group of respondents were actively involved in the study and data collection instruments were developed by the researcher based on leaders from the Kebeles administration on the review of related literatures. Officers from the Woredas, Officer from cobblestone project coordination office, and local development committee will be treated through interview. The rationale behind these respondents is to consolidate the reliability of information.

### **3.2.6 Validity and Reliability**

Checking the validity and reliability of data collecting instruments before providing to the actual study subject is the core to assure the quality of the data (Yalew, 1998). To ensure validity of instruments, initially the instruments were prepared by the researcher with guidance from the advisor. The questionnaire was pilot tested at one Kebele in Burayu Town that was not from the sample Kebeles.

### **3.2.7 Method of Data Analysis**

The data collected through structured interview and observations were used to supplement the quantitative data obtained from the Burayu Town residents. Both primary and secondary sources of data are analyzed using both qualitative and quantitative approaches. The statistical package for social sciences (SPSS) version 20 is used for processing and analyzing the data obtained from questionnaires. Descriptive statistics like frequencies, percentage, mean value and Standard deviation and figure is applied to facilitate meaningful analysis and interpretation of research findings. Besides, the data gathered through interview that is technically named qualitative data was analyzed through descriptive method of analysis. Finally, the researcher tried to enhance the reliability of the findings through discussion with the local development committee members.

## CHAPTER FOUR

### DATA PRESENTATION AND ANALYSIS

#### 4.1 Introduction

This chapter has two parts: the first part deals with the characteristics of the respondents and the second part presents the analysis and interpretation of the main data. The objective of this study is to analyze the challenges and prospects of internal road infrastructure development in Burayu Town. To this end, both quantitative and qualitative data obtained through questionnaire and individual interviews were used to answer the basic research questions. Besides, document analysis also used in order to get insight about the whole picture of the sample town internal road infrastructure development.

Initially the responses to questionnaire with cobblestone user's residents at Burayu Town were quantitatively analyzed whereas responses gained through interview was qualitatively analyzed and the central themes mentioned by the informant's interview concerning the research questions were identified. The collected data was transcribed and verbatim from individual interviews discussions. And then, the identified themes were categorized and thematically analyzed.

#### 4.2 Basic Information of the Respondents

Table 1: Views of Respondents on the Basic Information

The following table presents respondent's information and deals with their sex, age, qualification work experience of the sample respondents.

No	Items	Variables	Type of respondents	
			Education Bureau Experts	
			No	%
1	Sex	Male	53	71.6
		Female	21	28.4
2	Age	21-30	17	23
		31-40	33	44.6
		41-50	18	24.3

		51 & above	6	8.1
3	Qualification	Below 6 G	2	1.5
		Grade 7-12	17	12.6
		Certificate	20	14.8
		Diploma	53	39.3
		B.A/BSC	40	29.62
		M.A & Above	3	2.22
2	Work experience	Below 10	51	68.9
		11-20	15	20.3
		Above 20	8	10.8

**Source:** Survey Data

As shown in Table 1 of item 1, the majority of respondents 53 (71.6%) of the Burayu Town residents were males and 21 (28.4%) of them were females. This figure clearly indicated that participation of female as community participation was relatively low in the study area. Therefore, an effort has to be exerted to promote and enhance the participation of females in all aspects of community based development activities and help them to cope with their counterpart the male community. In fact, females, let alone occupy the managerial positions, their participation at community development activities were reasonably improved comparing to the previous trend. But, the proportion of female in the stunt areas was significantly less to that of male counterparts. Thus, attention must be given to females in all aspects of the positions as long as the role of women's are concerned and their contribution on the development of the community.

Item 2 of Table 1 reveals that, the majority 33 (44. 6 %) of the respondents of the sample Kebele's were categorized between 31-40 years old. Besides, insignificant proportion of study participants were 18 (24.3 %) were found between 41-50 years old. The above figure the clearly shows that most of the study participants were in the age of 31-40 years. Moreover majority of the respondents were relatively energetic, matured and fit to take responsibilities. Having reasonably matured age significantly impacts on the efficiency of the employees because these people are ready and fit to take responsibilities as per needed.

As to item 3 of the same Table above, Only 2 (1.58%) of the sample respondents were found to be below grade six whereas, 53 (39.3%) of them, almost the majority of the sample respondents have diploma. Besides, 40 (29.62%) of the study participants were qualified with first degree. Whereas, 20 (14.8 %) of them have certificate. From this result one can realize that significant number of the sample respondents have qualified with at least with diploma and can take responsibly as to their capacity.

As it shown in item 4 of the same Table above, is about experience on current position or years of service, here again the majority 51 (68.9 %) of the study participants had the work experience of below 10 years in the current position they hold. In the same manner 15 (20.3 %) of respondents were fall between 11-20 and 8 (10.8 %) of them found between the ages of 21-30 service years respectively. In general, the data illustrates that most of the sample respondents have reasonably adequate working experiences to carry out responsibility and to provide sufficient information about what is going on in their perspective institutions as well as about the development activities in their area. Besides, having relevant and adequate work experience definitely attracts and contributes a lot for the delivery of quality work to their respective organizations.

### 4.3 Inner-road Status and Cost-effectiveness of Cobblestone

Table 2: Views of Respondents on Inner-road Status and Cost-effectiveness

The following table presents respondent's view on inner-road status and cost-effectiveness of the Cobblestone road in Burayu Town

No	Items	Variables	Type of respondents	
			Burayu Town Residents	
			No	%
1	Most of the roads are cobblestone	Yes	53	71.6
		No	21	28.4
		Total	74	100
2	Most of the existing roads needs to be replaced with cobblestone	Yes	6	8.10
		No	68	91.89
		Total	74	100
3	Do you think cobblestone roads are cost-effective	Yes	61	82.43
		No	13	17.56
		Total	74	100

Source: Survey Data

Item one of Table 1 shows that of the respondents, 53 (71.60%) confirmed that most of the internal roads found in Burayu Town are cobblestone whereas 21 (28.40%) the study participants replied that most of the internal roads found in Burayu Town are not covered by cobblestone. The above data indicates that much of the internal road (71.60%) found in the sample town covered by the cobblestone and the internal road development program is efficient and looks functional.

As can be observed from the above table of item two, 68 (91.89%) of the study participants underlined that the existing roads did not be replaced with cobblestone because most of the internal roads found in Burayu Town are already covered by cobblestone and only 6 (8.10%) of respondents which are insignificant proportion of the residents respond yes. As to me, since most of the internal roads found in Burayu Town are cobblestone, how come most of the existing roads need to be replaced with cobblestone? It looks fallacy and totally contradictory.

In line with this, during the course of discussion with interviewees they offered the following account

*.....In fact, many of the Burayu town internal roads are covered with cobblestone road but with all its bad features (See the attached pictures of the study area). In the name of electricity, water and telecommunication maintenance and/or development, many parts of the internal roads are remained destroyed and demolished with poor management and coordination.*

As to item 3 of the same table, only 13 (17.56%) of the Burayu town residents do not think cobblestone roads are cost-effective while 61 (82.43%) of the study participants were confirmed that cobblestone roads are cost-effective and welcomed by the majority of the sample respondents. From this result one can realize that significant number of the residents in the study area agreed that cobblestone roads are cost-effective and they all are accepted the cobblestone projects.

#### 4.4 Inner-road Status and Cost-effectiveness of Cobblestone (Continued)

**Table 3: Views of Respondents on Inner-road Status and Cost-effectiveness)**

The following table presents respondent's view on cobblestone road status and deals with their understanding about the following basic questions.

No	Items	Variables	Type of respondents	
			Burayu Town Residents	
			No	%
4	Do you think cobblestone roads serve for several years in the future	Yes	59	79.73
		No	15	20.27
		Total	74	100
5	Do you think the usage of these roads must be regulated by law	Yes	71	95.95
		No	3	4.05
		Total	74	100

**Source:** Survey Data

Regarding item 4, as shown in the table above, 59 (79.73%) of the sample respondents were confirmed that cobblestone roads serve for several years in the future while 15 (20.27%) of the study participants were not favored the ideas raised (cobblestone roads serve for several years in the future) instead they thought that cobblestone roads are temporary program and cannot serve the community for long. In general, the above data illustrates that most of the Burayu town residents agreed and believed that cobblestone roads they have today will serve the community for several years in the future and only few (20.27%) of the study participants stand against the issue raised. Interviewees were also substantiated the above result, cobblestone roads can serve for several years but uncoordinated stakeholders independent work together with lack of periodic maintenance defiantly shorten the life of cobblestone road in our Kebele.

Regarding item 5, as shown in the table above, 71 (95.95%) of the study participants think the usage of these roads must be regulated by law periodically. Whereas, 3 (4.05) of the residents did not think usage of these roads must be regulated by law periodically. From this result one can realize that since the majority 95.95% of the study participants agreed the importance of periodic regulation of the existing cobblestone roads, it is mandatory to keep and set cobblestone roads must be regulated by law periodically.

#### 4.5. Quality of the Cobblestone Roads

Table 4: Respondents view on Quality of the Cobblestone Roads in the Study area

N/ 0	Items	Respondents						
		Burayu Town Residents					Mean	Standard Deviation
		SD	D	N	A	SA		
1	It is difficult to easily displace a single stone from the road	50	18	3	3		4.57	.760
2	The size and shape of the stones adds the strength of the road	57	17				4.77	.424
3	The edges and sides of the road are strongly fixed with big concretes and cement	26	27	5	11	5	3.78	1.264
4	The road is segmented with proper distance using concrete and cement	28	35	2	8	1	4.09	.982
5	Car speed barkers are properly applied and don't create difficulty during night walk	17	35	5	15	2	3.68	1.124
6	The road is level and doesn't hold water during "Kirem"	22	27	6	15	3	.68	1.223
7	Ditches and sewerage pipes are properly fixed	33	28	3	7	2	4.14	1.058
8	It is not easy to spoil the road with dusts from either side of the road	13	17	5	18	21	2.77	1.513
9	The road adds for the beauty in the village	5	13	14	24	18	2.50	1.230
10	The road helped to move around more easily more in vehicles and on foot	16	32	5	12	9	3.46	1.326
11	Compared with the previous roads, the cobblestone is by far much better	6	27	9	16	14	2.93	1.314
12	The road will serve several years with little maintenance	5	13	14	24	18	2.50	1.230

Source: Survey Data

Road construction quality will be largely dependent on the standard and frequency of technical support as well as detailed specification of elements, design and quality of consultant and contractor. The number of staff members in the field will be mostly determined by the regularity with which they must visit each site. It is imperative to assign the appropriate staff to monitor the quality of the construction (IFRC, 2012:90). Lack of adequate qualified technical staff can result in poor construction monitoring and low-quality infrastructure (ibid).

The quality of the road network affects almost everybody in daily life. Therefore users, residents, consumers, employees, businessmen or taxpayers, we all should care that roads are managed efficiently and are able to deliver good service to society (ERF, 2014:6). Due to lack of technical ability, the quality of the roads is assessed using the opinion of the community.

In order to assess the opinion of the villagers regarding the quality of the road, certain statements were presented to be rated by the respondents. These statements are related to the quality of the road that most people expected to be achieved.

The cobblestone roads, by its nature simply deteriorate or destruct unless constructed with quality, as the stability of one Cobblestone in its place depends on the stability of the other. If a single Cobblestone is displaced (scattered) from the normal position, there is a possibility for the whole Cobblestones to gradually displace. Hence, each single cobblestone is supposed to be well fixed in the ground, and can't be easily displaced. The low agreement level to this statement is  $M = (4.57)$  which are below the moderate level of standard deviation (0.760). Hence, the road can be easily damaged with displaced stones from it. In this respect, the respondents has disagreed that the road lacks the required quality(**See the attached he picture**).



**Picture 1:** Picture that shows the current status of the Cobblestone in Burayu Town

The edge or the end of the roads which has a connection with asphalt or earthen road can simply be destroyed unless strongly fixed with a cement or concrete. However, the respondents only moderately agreed,  $M= (3.78)$  and standard deviation  $(1.264)$ , to the statement that the edges and sides of the road did not strongly fixed with big concretes and cement. As a result, the roads are not meeting this standard to the expected high level. Moreover, the curve stones should also be properly erected, stuck or fixed by cement and other materials in order for it to hold the Cobbles.

If the joint area between the end of the cobblestone roads and either asphalt or earthen road is not constructed with the help of big stone and cement, it will simply deteriorate and makes other Cobblestones to scatter, which is evidenced during my observation in the site visit of the roads. The rating by the respondents also asserts the lack of quality in some parts of the roads. They disagreed with  $M= (4.09)$  and standard deviation  $(0.982)$ , that the roads did not segmented with

proper distance using concrete and cement; only car speed breakers are rarely applied that does not bring much difficulty for night walk.



**Picture 2:** Picture that shows the edge or the end of the roads in Burayu Town

Statements that the road is level and doesn't hold water during "Kiremt", and Ditches and sewerage pipes did not properly fixed and significantly supported by the  $M= (4.14)$  and standard deviation=  $(1.058)$  respectively. These assessment of the community implied that the roads were not constructed with appropriate slope and where water flows failed to fall directly to the ditches. The leveling of the roads also helped not to contain water for long time, which otherwise swipes out the sand and causes deterioration to the roads. However, it is observed that the ditches in the other side of the roads are not safe from the mud/dust or waste dumps.

This somehow created overflow of water/mud during “Kiremt” and may cause damage to the roads and this is supported by the respondents, that they disagreed, with  $M= (0.68)$  and standard deviation  $(1.223)$ , to the statement that it is not easy to spoil the road with dusts from either side of the road. This is due to the lack of quality in the ditches that were not part of the road construction project. The ditches were constructed as part of the previous “found stone” road, and in some areas they even get damaged during the new cobblestone road construction.

In the first item of the above table shows that the overflow of water/mud during “Kiremt” and may cause damage to the roads. This is supported by the respondents, that they disagreed, with  $M= (2.77)$  and standard deviation  $= (1.513)$  to the statement that it is not easy to spoil the road with dusts from either side of the road. This is due to the lack of quality in the ditches that were not part of the road construction project. The ditches were constructed as part of the previous “care Stone” road, and in some areas they even get damaged during the new cobblestone road construction.

The quality of the road is more attributed to the beauty of the villages; where respondents have relatively average level agreement,  $M= (2.50)$  and  $SD= (1.230)$  to the statement that the road adds for the beauty in the village. Moreover, an average level disagreement,  $M= (3.46)$  and  $SD= (1.326)$ , is attributed to the statement that the road failed to helped to move around more easily both in vehicles and on foot. Such low level quality rating was mainly due to the problems and difficulties the villagers’ experienced using car in the previous roads; as well as the mud and watery roads during the “Kiremt” season. For this reason, Respondents moderately believed,  $M= (2.93)$  and  $SD= (1.314)$  that the cobblestone road is an improved infrastructure; and by far much better than the roads before. They also have considerably moderate level trust,  $M= (2.50)$  and  $SD= (1.230)$ , that these roads will serve several years provided there is proper maintenance arrangement by the concerned parties.

The overall cobblestone road quality is computed to an average agreement level, which is above a moderate level agreement. In general, although there are some major limitations in the road, the overall quality of the road was found moderately acceptable to the community.



**Picture 3:** Picture that shows the overall cobblestone road status in Burayu Town

### 4.6 Benefits of the Cobblestone Roads

**Table 5:** Respondents view on Benefits of the Cobblestone Roads in Burayu Town

N/0	Items	Respondents						
		Burayu Town Residents					Mean	Standard Deviation
		V L	L	Av	H	VH		
1	Villages are better connected with the roads	34	26	4	8	2	4.11	1.093
2	Villages become more economically viable places	29	26	9	7	3	3.96	1.128
3	Provide safe walk way even during the night	27	28	4	13	2	3.88	1.170
4	Reduced dust in dry seasons	34	29	3	6	2		

	and mud during rainy season						4.18	1.025
5	Provide easier access to trucks providing supplies: ex charcoal truck, pit latrine emptier	33	19	7	8	7	3.85	1.352
6	Improved access to Ambulance, rented taxi, house car, school bus, etc.	28	38	5	3		4.23	.750
7	Children found playing field (ex: soccer, cycling)	40	29	3	2		4.45	.705
8	Adds to the beauty and sanitation in the villages	32	35	3	4		4.28	.785
9	Provide experience for other similar works	35	33	4	1	1	4.35	.766
10	Improved status of the village for living	39	23	7	4	1	4.28	.944

**Source:** Survey Data

As shown in Table 5 item 1, cobblestone roads are one of the major community assets and provide large benefits to the society. Road improvements are believed to bring benefits to road users through improved access to hospitals, schools, and markets; improved comfort, speed, and safety; and lower vehicle operating costs. The roads are also expected in making urban clean and beautiful and above all they facilitate the overall service delivery.

It is obvious that cobblestone road construction is playing a great role in bringing about social, economic and environmental benefits at the local and national level. The cobblestone construction projects are expected to bring various benefits to the community and villagers in the research area (Burayu Town). In this research, therefore, the cobblestone roads are assessed for its benefits to the community; and presented in the table below.

Cobblestone road development has played a tremendous role in socioeconomic development within the society. They have brought much needed employment benefits to the town residents and citizens of the country as a whole along with the creation of small business in and around the project sites. The positive impacts of the cobblestone roads can be described in terms of the offsite benefits resulting from the pavement coverage of the Burayu internal roads, which has accrued from the facilitation of water infiltration and groundwater recharge and the reduction of dust emission to the atmosphere as well.

One of such benefits is the comfort villagers moderately enjoyed as the result of the cobblestone roads. In particular, the cobblestone roads have moderately reduced villagers' challenges especially during the Kiremt season, as well as walking in the night. Respondents disagreed to the level  $M=(4.183)$  and  $SD= (1.025)$  that cobblestone roads not fairly reduced dust in dry seasons and mud during rainy season. In addition, other significant benefit of the Burayu town cobblestone road is not providing safe walk way even during the night as per the expectation of the residents, which is disagreed to the level  $M= (3.88)$  and  $SD (1.170)$ .

As shown in Table 5 item 5, respondent disagreed to the level  $M= (3.85)$  and  $SD= (1.352)$ , the cobblestone road is also weakly providing easier access to trucks providing supplies: such as charcoal truck, pit latrine emptier. Similar benefit of the road providing improved access to Ambulance, rented taxi, house car, school bus, etc but poorly disagreed to the level  $M= (3.44)$  and  $SD= (0.750)$  by the respondents. Among others the newly constructed cobblestone roads failed to adds the beauty and sanitation in the villages. This was strongly disagreed by the respondents with  $M= (4.28)$  and  $SD= (0.785)$  strongly level of disagreement. However, these benefits of the road are suffered from some improper ditches and waste dumps and sewerages from some members of the society.(See the attached picture).



**Picture 4:** Picture that shows the overall cobblestone road status in Burayu Town

Moreover, the respondents positively agreed that the status of the village for living is now moderately improved. Some informants also expressed the economic viability of the village as they enjoy better house renting potential is significantly increasing. Even children of the study area did not found the road as safer playing ground. This is not an emerging benefit of the cobblestone road that children found playing field (ex: soccer, cycling).

Although the respondents did not have strong agreement to some of the statements ( such as; Villages are better connected with the roads, Villages become more economically viable places, and Provide experience for other similar works;) but these benefits were not denied at all . Such benefits of the cobblestone are believed to have been enjoyed to the weak level and confirmed by M= (4.11) and SD= (1.093), M= (3.96) and SD= (1.128) and M= (4.35) and SD= (.766 ) respectively. The overall benefits of the cobblestone the rated with aggregated level of M=3.00, which is significantly belowthe moderate level. Hence, the community has moderately acknowledged and enjoyed the benefits of the road with all gap observed during the survey period.

#### 4.7. Factors Affecting Cobblestone Roads

**Table 6: Respondents view on Factors Affecting Cobblestone Roads in Burayu Town**

N/0	Items	Respondents						
		Burayu Town Residents					Mean	Standard Deviation
		V L	L	Av	H	VH		
1	Utility access construction such as water pipes and sewerage pipes	12	21	7	19	15	3.05	1.423
2	Eclectic and telecommunication poles	6	26	13	16	13	3.05	1.270
3	Improper ditches /resulted in water or mud overflow to the roads/	17	10	5	24	17	3.29	1.409
4	Very heavy trucks – loaded with construction materials	12	17	7	28	10	3.09	1.346
5	Improper waste dumps	4	9	5	35	21	3.81	1.143
6	The landscape of major road projects	9	18	8	25	14	3.23	1.340

**Source:** Survey Data

According to the response of the respondents, the cobblestone roads are found to have met certain quality standards, and benefited the community in various ways. However, the community, and the government officials, has the feeling that these quality and benefits may not last very long because there were certain problems observed in connection with the roads quality.

To assess these problems/challenges, respondents were presented with common problems that are affecting the road and ultimately damage the road. Among others, utility access construction, such as water pipes and sewerage pipes are some of the reasons damaging the roads. This is the most significant problem that the respondents agreed to the level  $M= (3.05)$  and  $SD= (1.423)$  such maintenance of water pipes and sewerage lines can't be done without first dismantling the cobblestone(See the attached Picture taken from the study area). But the reconstruction/maintenance of the cobblestone road is damaging frequently but there are few responsible individual try to maintain the road and this situation was used captured during site visit.

In line with this interviewees were forwarded the following account;

*Lack of coordination among stakeholders, specifically ELPA, TELL and Water & Sewerage Offices (See the attached picture). Due to this hard fact, the cobblestone roads in our town have become demolishing.*



**Picture 4:** Picture that shows the overall cobblestone road status in Burayu Town

Another significant problem observed was improper ditches /resulted in water or mud overflow to the roads/. This is also highly agreed by the respondents to the level  $M= (3.29)$  and  $SD= (1.409)$ . In addition, Improper waste dumps is believed to have posed moderate level,  $M= (3.81)$  and  $SD= (1.143)$ , problem to the roads (See the attached picture).

There are other problems that have relatively moderate impact/damage to the cobblestone roads. These are eclectic and telecommunication poles, very heavy trucks – loaded with construction materials, and the landscape of the road areas. Such problems are agreed as they are believed to have imposed considerable damage to the roads. However, these could be potential threat to the cobblestone in the upcoming future (See the attached picture) and confirmed with  $M= (3.05)$  and  $SD= (1.270)$ ,  $M= (3.09)$  and  $SD= (1.346)$  and  $M= (3.23)$  and  $SD= (1.340)$  respectively (See annex A specifically at item #2).

During the survey period and site visit, I (the researcher) have observed that the already cobblestone roads were dismantled and demolishing by the water and sewerage authority for improved water pipes (See the attached picture). This was arranged with the Kebele leaders, the community representatives and even the top level management of the Burayu town will pay some amount for reconstruction/maintenance of the road. Unless maintained quickly, the damage on the roads may aggravate negatively. The community does not have trust that these roads are going to be maintained soon with the desired quality soon. The overall damage to the roads amounted to the moderate level (Not sever). This indicates the need to address very common problems sooner.

#### 4.7. Management Competency of the Local Government (Kebele Administration)

**Table 7: Respondents view on Management Competency of the Local Government**

N/0	Items	Respondents						
		Burayu Town Residents					Mean	Standard Deviation
		V	L	Av	H	VH		
		L						
1	Road projects are according to the plan	10	8	18	26	12	2.70	1.258
2	The projects are completed within time and budget	11	12	10	25	16	2.69	1.374
3	The management effectively coordinate all actors	22	28	8	11	5	3.69	1.238
4	Employees of the administration has the required expertise in mobilizing the community	26	35	5	6	2	4.04	.999
5	There is road maintenance arrangement	22	34	6	10	2	3.86	1.077
6	The administration is honored by the community	19	28	6	17	4	3.55	1.251

**Source:** Survey Data

In order to assess the efficiency and effectiveness of managing the construction project, respondents' opinions were evaluated as in the table above. Mainly, the road construction projects were managed and supervised by the local government authority. This authority was responsible for initiating, planning and executing the cobblestone projects. Hence, the success or failure of the road construction project rests on the efforts made by the staff from the local authority.

Respondents rated their agreement to the statement that staff of the administration has the required expertise in mobilizing the community. They have rated with low agreement level of  $M= (4.043)$  and  $SD= (0.999)$ , which is significantly below moderate level agreement. This indicated that the administrative representatives are believed to have less acceptable experience for the project. The administrative authority has, in addition to allotting budget for the road

works, addressed the need for improved road infrastructure in the community moderately. For this effort, the community has honored the authority, with an average agreement level of M= (3.55) and SD= (1.251).

The respondents however, showed reservation on agreeing to the statements that road projects are according to the plan, there was road maintenance arrangement, and the management moderately effective and coordinate all actors. These statements are agreed only to the moderate level with M= (2.70) and SD= (1.258), M= (3.86) and SD= (1.077), M= (3.69) and SD= (1.238), respectively. Respondents also disagreed that the projects were completed within time and budget by M= (2.69) and SD= (1.374) at average level. Rating overall the management by the local administration is rated with average, which is a moderate level agreement in the range.

#### 4.8. Challenges of Cobblestone Roads Construction

**Table 8: Respondents Perception on Challenges Observed while Cobblestone Roads construction in the Study Area**

N/0	Items	Respondents						
		Burayu Town Residents					Mean	Standard Deviation
		VH	H	Av	L	VL		
1	Financial limitations	15	42	5	7	5	3.74	1.099
2	Inactive participation of the community	22	29	4	15	4	3.68	1.251
3	Poor project management and coordination	24	40	2	7	1	4.07	.926
4	Lack of ownership by the community	6	21	6	23	18	2.65	1.339
5	Improper prioritization of each access roads	7	7	3	27	30	2.11	1.299
6	Landscape of the locality	23	33	7	6	5	3.85	1.155
7	Improper time/season of road construction	16	21	22	10	5	3.45	1.172
8	Removing previous road materials	11	8	21	20	14	2.76	1.301
9	Theft of construction materials	21	30	9	11	2	3.78	1.109
10	Recruiting volunteer local committee member	29	28	2	10	4	2.07	1.217
11	Lack of trust in officials managing finance	19	31	6	14	4	3.64	1.212

12	Absence of prior community awareness	21	32	3	14	2	3.78	1.153
13	Setting equitable contribution by families	24	34	3	9	4	3.88	1.158
14	Timely collection of community contribution	24	30	4	13	3	3.80	1.193
15	Conflict with the Burayu town road master plan	17	28	11	14	4	3.54	1.196

**Source:** Survey Data

In Table 8 above, the cobblestone projects are not believed to be an easy going endeavors to all stakeholders participated. The projects may not come up with its completions without some sort of pitfalls that could compromise the road quality and has effect in timely and within budget handover of the newly roads. Some of the challenges raised to the respondents are presented and evaluated in the table above.

Among the list of challenges, financial limitation in the road construction was believed to be the most challenging with  $M= (3.74)$  and  $SD= (1.099)$ , indicating a high level challenge within the in the range. In relation to the financial limitation, the 2nd most challenging activity was the timely collection of community contribution confirmed with  $M= (3.80)$  and  $SD= (1.193)$ . The slow rate of raising fund by the community was a challenge with  $M= (2.65)$  and  $SD= (1.339)$  average level of agreement. Inactive participation of the community was also a considerably high level challenge with  $M= (3.68)$  and  $SD= (1.251)$  agreement level by the household respondents.

In aggregate terms, the following items are presented as follow. Accordingly, poor project management and coordination, and lack of community sense of ownership are believed to have excreted a moderate level challenge on the road construction project with  $M= (4.07)$  and  $SD= (.926)$ ,  $M= (2.65)$  and  $SD= (1.339)$  respective agreement level by the respondents.

Other challenges such as absence of prior community awareness, improper time/season of road construction, removing previous road materials, theft of construction materials, recruiting volunteer local committee member, and lack of trust in officials managing finance were considered as major source of challenge during the cobblestone road construction in the study area and confirmed with  $M= (3.78)$  and  $SD= (1.153)$ ,  $M= (3.45)$  and  $SD= (1.172)$ ,  $M= (2.76)$  and

SD= (1.301), M= (3.78) and SD= (1.109), M= (2.07) and SD= (1.217) and M= (3.64) and SD= (1.212). Besides, during the interview session, respondents underlie that, lack of accountability and sense ownership by the community in our locality can take the lion share of the problem. Then other key problems were also observed. These are the issue of maintenance and negligently use of road. A given internal roads without maintenance obviously deteriorating and become out of service.

As a result, the overall road construction challenges were not considerably high as the aggregate level of challenge in the coble stone construction were agreed to the average which is significantly below the moderate level of challenge. Although the overall challenges faced were to the level low, the community stressed the financial challenges.

**Table 9: Cobblestone Roads Construction and Community Participation in Burayu Town**

N/O	Items	Respondents							Mean	Standard Deviation
		Burayu Town Residents								
		V	L	Av	H	VH				
		L								
1	The community participated voluntarily	30	22	7	7	8	3.85	1.36		
2	The community was highly participated	25	41	5	2	1	4.23	.750		
3	The community has raised adequate financing	34	35	2	2	1	4.45	.705		
4	The community opinion, knowledge, experience, expertise, and labor were adequately invested in the projects	27	29	5	8	5	3.81	1.143		
5	The community has sense of ownership	19	20	6	22	9	3.23	1.340		
6	The community will positively engaged in similar projects in the future	21	26	6	14	7	3.55	1.251		
7	The local committee members are honored by the community	31	32	2	6	3	4.09	.982		
8	The community participates in	21	31	5	9	8				

	the maintenance of damaged part of the road						3.68	1.124
9	There is a sense of accountability not for causing damage in the roads	19	30	7	10	7	3.68	1.223
10	The financial contribution by the community are fairly enough	29	32	3	9	-	4.14	1.058

**Source:** Survey Data

Item found in the above Table the following issues are discussed thoroughly. Accordingly, local development projects carried out with the participation of the community have a profound importance to make its members closer to each other and work together for a common purpose. The role and participation of the community, as a stakeholder, is crucial in an inclusive road infrastructure development. In such local development activity, it is believed that the community should participate actively as they are the first beneficiary of the outcome and to make them develop a sense of ownership to preserve, manage and maintain the development outcomes without expecting the government for any budget allocation to such activities. Thus, the community are expected to participate in contributing money and in kind (financially and operationally) for the construction of the sub base of the roads, collaborated in all aspects with the contractors or enterprises contracting for construction of the sub base and/or pavement of the Cobblestones.

The cobblestone road construction projects assume active participation of the community without whom the projects couldn't be realized effectively. Among others, the community is supposed to raise initial funds in the form of contribution from each household in the nearby community. Their participation was also demanded during the meetings with local officials and committee members. Above all the community members are supposed to exert efforts in the follow up of the road construction projects and protect the road from any sort of damages. In order to assess the level of the community participation, respondents were asked certain questions and rate their agreements to the statements.

The one-sample mean and standard deviation to assess the level of community participation is depicted in the table above. The first statement is to assess the voluntary participation of the community members. Accordingly, the average agreement level as to the voluntary participation by the community was evaluated to the level  $M= (3.85)$  and  $SD= (1.36)$  indicates, the average agreement level was high and above the moderate agreement level and the result clearly indicated that the disagreement to the voluntary community participation observed in the study area. Some of the residents and the experience that there were few members turn out in the meetings conducted to raise awareness and exchange of ideas.

In the same table of item 5, respondents were asked to rate the level of stakeholders especially the community opinion, knowledge, experience, expertise, and labor. As a result all mentioned elements from the community were not adequately invested in the cobblestone projects in the study area. For this statement, the average level of agreement by the respondents is  $M= (3.81)$  and  $SD= (1.143)$ , which is a disagreement to the statement. Besides, respondents were asked for the feeling of ownership by the community. Accordingly, the average agreement level  $M= (3.23)$  and  $SD= (1.340)$  is a moderate level agreement that the community has the sense of ownership. Furthermore, the community has only slightly below moderate level agreement,  $M= (3.55)$  and  $SD= (1.251)$ , that they are willing to participate in similar projects in the future. That is their participation was half-hearted expecting the government being the sole care taker of such projects.

Respondents were asked to show their level of agreement about the local committee members. Accordingly, they lack refused to appreciate the efforts made by the local committee members and they only have few hope on them. Besides, they only agreed to the low level  $M= (4.09)$  and  $SD= (.982)$  that they honored the local committees. If they do not take more seriously, few members believed that committee members have some sort of partiality in setting their agenda.

In the same table of item 8, respondents were asked to rate their participation in the maintenance of damaged of cobblestone roads, the community has disagreed to the rating level of  $M= (3.68)$  and  $SD= (1.124)$ , which is far below the moderate level agreement rating. This indicates that the community has a minimal or no role to fix roads' damage and maintenance as well. In the same table of item 9 the community also observed absence of the sense of accountability to safe keep

the newly constructed cobblestone roads from any sort of damage. For this statement of accountability, the respondents average rating,  $M= (3.68)$  and  $SD= (1.223)$ , shows lack of responsibility in the community. However, one is subject to maintain the road he/she damaged for some reason that were priority informed and accepted by the local committee.

As everybody agreed the community is one of the financial sources for the cobblestone road construction in their locality or Burayu town. This financial contribution is the most visible means of community participation at all level. The respondents evaluation on the community's financial contribution is believed to be below moderate level with low agreement rating of  $M= (4.14)$  and  $SD= (1.058)$  respectively.

Overall, the average rating for the community participation in the cobblestone road construction project is indicating that the community participation in the construction and maintenance of the roads was a low level participation has been observed. Besides, the low level responsibility was amounted to some unidentified members in the community that may throw dumps in the along the cobblestone roads.

In the following section, the data secured through interview questions were thematically organized in themes and analyzed in the form of narration. Respondents were asked some questions on this agenda and their responses are presented hereunder.

With regard to question number one all the answers given by the respondents were organized with the same them as follows:

*.....In fact, many of the Burayu town internal roads are covered with cobblestone road but with all its bad features (See **the attached pictures of the study area**). In the name of electricity, water and telecommunication maintenance and/or development, many parts of the internal roads are remained destroyed and demolished with poor management and coordination. Communities are always complaining and disappointed, as a result they lose hope on these guys and the road getting deteriorated. Besides, cobblestone roads in the study area has becoming badly managed and deteriorated within the coming few years before satisfying and serving the users as per needed.*

In the course of my discussion with interviewees in item two, they offered the following account

*....cobblestone road construction was started in the study area in particular and the whole country in general since 2005. It was solely for a dual effort to create job opportunities for the unemployed youths, and owning the residents that include pedestrian's long-lasting internal road and pavement .....*

Similarly with regard to question number three all the answers given by the respondents were organized with the same them as follows:

*...according to the study (interview) participants' agreement, priorities are always given to pedestrians and residents respectively. But, it does not mean other users are marginalized instead it is just prioritizing the users. Accordingly, other users like vehicles owners, traders, rural communities coming to Burayu town are using the internal road frequently .....*

In interview session participants were asked the following issues. These were....what will be the future fate of the roads, who is responsible to own the roads, and to which particular body can we report for any event on the roads? Accordingly, the following account has been given:

*.... Almost all of the interview discussants underlined that it is important to maintain and preserve the existing cobblestone roads that we own today in our locality. It can be easily deteriorated and destroyed unless certain measures are taken. We have been observed there are ample of challenges that can be the key reason to be the destruction of our internal road.*

*It is clear that the roads are always the outcomes of the efforts that were directly or indirectly involved in the construction and technically named as the "Community". However, the community has to develop a sense of ownership and must be engage in the maintenance of the roads periodically.*

*Besides, in case of major incidents (land slide, flood and the so on), the community shall report to the local development committee, the Wereda road development office and even to the regional concerned bodies just in time and that defiantly suppose to take proper action before collapsing the entire road.....*

In a similar fashion respondents were asked to respond to the following issue. These issue werewhat are the main problems observed in the overall situations, what should be the corrective actions taken and what preconditions are needed to sustainably use these roads? Accordingly, they offered the following account:-

*....lack of accountability and sense ownership by the community in our locality can take the lion share of the problem. Then other key problems were also observed. These are the issue of maintenance and negligently use of road. A given internal roads without maintenance obviously deteriorating and become out of service.*

*Lack of coordination among stakeholders, specifically ELPA, TELL and Water & Sewerage Offices(See **the attached picture**). Due to this hard fact, the cobblestone roads in our town have become demolishing.*

*Maintenance is mandatory and must be carried out periodically otherwise, if maintenance is ignored and not carried out timely/periodically, the road will continue to be deteriorating and destroying, making passage increasingly difficult, uncomfortable and hard to road users.....*

## **CHAPTER FIVE**

### **SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

The previous chapter presented the data analyses of the study. This chapter comprised of the major findings of the study, the conclusion and the recommendation drawn on the basis of the findings.

#### **5.2. Summary of the Findings**

This study was conducted aiming at assessing the overall opportunities and challenges of Cobblestone roads in relation to their management, maintenance, and community participation. This study endeavored to explore the quality of the roads and the benefits that the community is perceived by selected kebeles in Burayu Town. In addition, the paper aims at assessing the factors that affect the internal roads, and forward the recommendations what has to be done next in order to solve the problems observed and bridge the gap on this particular issue.

Infrastructures development is very essential for any area to bring about an overall development in all aspects and especially to change the lifestyle of the people. These infrastructures can bring about rapid economic growth; a social and cultural as well as attitudinal change and facilitate the service delivery process for the entire community.

Cobblestone roads are among the key indicator of urban development and improve or ease the life of the community which are being constructed under the Urban Local Government Development Program (ULGDP). Cobblestone roads development is one of the local urban developments that is being constructed by the participation of the community and the government in Burayu Town in general and these two kebeles sample in particular.

Unlike earlier times, the community has started asking for the cobblestone infrastructure development that is now common in various places in the country. As one form of participation, the community is expected to raise funds, in the form of contribution, up to the completion of the sub base construction; while the rest activities of the road construction is the responsibility contributed by

the government. Financially, the community participation is in construction of the sub base and the government in the pavement of the Cobblestone roads.

The fund raised from the community was conducted through the local committee, who had experienced uneasy job. The findings suggested that, to collect the fund from the community were time taking effort to the committee in charge that entails lack of active participation from the villagers, and believed to have unexpected impact in the project timing. The responses in the survey, moreover, entailed that the community opinion, knowledge, experience, expertise, and labor were not explored and adequately invested in the cobblestone road projects. The low level participation, in most cases, was resulted from the community's understanding in putting the government as sole responsible to such undertaking.

In some cases, people think the realization of such projects could serve as government propaganda to win the hearts of many citizens during election periods. Such misconception, reported by informants, refrained the community for heartfelt engagement in the project trying to reveal their discomfort in the political situation. In general the community participation was low level and their sense of ownership was as also remained low participation.

The Cobblestone roads that are being constructed around the selected Kebeles in Burayu town are bringing about some positive changes, which benefited the community in many ways. According to the ratings by the respondents living in the nearby roads, the community has started enjoying several benefits in contrast to the difficulties and problems they had faced before having the cobblestone roads but with all limitations. This is remained to be the hard fact. The cobblestone roads have reduced villagers' challenges especially during the Kiremt season, as well as walking in the night.

Among others the newly constructed cobblestone roads in the study area moderately adds to the beauty and sanitation in the villages. Moreover, the respondents have moderately agreed that the status of the village for living is now significantly improved. The roads also facilitate the service delivery, and above all these roads are making the town clean and beautiful. However, these benefits of the road may be suffered from some improper ditches and sometimes dumps and sewerages that results from the carelessness from some members of the society. The major damage to these roads was the construction of water/sewerage pipes, and water or mud overflow to the roads, and improper ditches in some areas.

Not only individuals, but government organizations, namely water/sewerage authority and EELPA (Ethiopian Electric and Power Authority), are making/maintaining their respective infrastructure development activity with poor coordination, which negatively impacted the already newly constructed cobblestone roads, Although Water and Electricity infrastructures are also highly demanded by the community, however, such uncoordinated infrastructure development projects have caused heavy damage to the roads; and resulted in multiple costs with deteriorated road quality.

As clearly indicated from the survey data, the maintenance of the cobblestone roads was not up to the expected quality and strength of the roads. Even, the road maintenance arrangement is vague and without clear roles and responsibilities to the stakeholders to safe keeps the roads from damage. It seems all the internal roads are left for gradual damage. The response from the government officials during the interview also shows that even though managing and maintaining of these roads is necessary, there is no any manual, and budget, how to manage, maintain and treat the roads. In some cases, the road user who brings damage in the roads is subjected to its maintenance, with additional fines. The maintained part of the roads is clearly distinguishable by its poorer quality than its surrounding areas (See the attached Picture).

Again, the communities in the study areas ownership or be living that the rode is belongs to them. As a result, due to the absence of clear maintenance guidelines and the community could not develop a sense of ownership to manage and maintain the roads though they showed their commitment towards protecting the roads. According to the survey result, the community to some extent taking measures on hindering the movement of trucks along these roads as well as, pointing to those who caused some sort of damage to the roads. In sum, the main focus was simply on the construction to have local cobblestone road access in order to solve problems but disregarding the future potential maintenance need.

### **5.3. Conclusions**

Many and huge programs are also being implemented in order to create jobs to solve the problem of youth unemployment which is critical and the main problem especially in urban areas. Amongst these, the cobblestone road construction project is the one that is being implemented in the urban areas of the country at large and in Burayu town in particular.

Infrastructures development especially the internal road is very essential for any location to bring about an overall development and help to change the lifestyle of the people at large. These infrastructures can bring about rapid economic growth, social as well as attitudinal change. Based on the analysis of the data and the findings discussed earlier, the following conclusions have been drawn.

The study focused on the challenges and opportunities in the construction, management and maintenance of cobblestone road, and assessed the quality of the road as well as the community participation. The findings of the study show that the quality of the cobblestone roads is not in its acceptable standard to the community, and they achieved moderate benefits. The cobblestone roads are added the beauty of the town/ study area and the villages became economically viable for house owners as well as to those who seek rented houses to live. The benefits include access to transportation facility (taxi, ambulances, school buses and the like). Generally, there is a huge benefit of the roads to the community investment in the cobblestone roads. The cobblestone roads have also positive impact on the overall social, cultural and attitudinal change.

The road projects do not have increased the understanding and awareness of the community towards local development. There is the tendency of the community to push the responsibility to the government while their participation mainly limited to their financial contribution for the pavement work. Few volunteers serve as committee members, while the majority's skill and knowledge were not utilized. Moreover, the project organizers from the government side did not provide adequate orientation to mobilize the community. In general, although the community demanded the cobblestone roads, their direct engagement and participation were not up to the expectation of most villagers. The government did not create a smooth space and have a regulation to make the community and other actors to fully participate.

According the the finding of the study the roads quality is threatened by certain challenges both from community members as well as uncoordinated government infrastructure development efforts, especially EELP, water pipes constriction and the like). The community at large and Individual households in particular, who need to renew their water line, are supposed to get the permission by the committee that allows them to dismantle the cobblestone. However, the reconstruction of the damaged roads (See the attached picture) usually ends up in its poorest quality; where the committees are not supposed to take proper action.

According to the interview participants anybody does not discard any waste materials on the roads and the community is developing a culture of positive attitude towards the overall benefit of cobblestone roads. But what the researcher observed in the field visit to some areas is the opposite. Lack of coordination like the constriction of water pipes, for improving access to potable water, by the Water and Sewerage Authority usually comes after these roads were built. But this demand for improved water pipes resulted in severely damaged roads quality; although the authority funded the reconstruction of the roads. Uncoordinated efforts by different government organizations will therefore result in cost duplication; which resulted in poorly maintained roads (See the attached picture). Finally, lack of close supervision in the maintenance of the roads by the committee members, the residents themselves and the government as well.

Major challenges were exhibited and these are poor community sense of ownership, lack of clear road management and maintenance arrangement by the government, however, the community could not push their effort, and unable to account those who caused the damage. The benefits obtained has improved the sense of ownership by the community, which is also an opportunity to safe keep the roads It has also to be recognized that the sustainability of the roads is difficult without the full participation of the entire community.

According to the finding of the study, the community believed that the cobblestone roads are expensive and think will not serve several years. The demand for cobblestone roads by the community and their financial contribution are grand opportunity to the development of cobblestone roads but with all limitations. However, cobblestone projects are faced with several challenges that they are being damaged by individuals and other government organs in the effort to water infrastructure development, electricity and telecommunication related projects. The maintenance of affected roads also felt short of quality they had before; which resulted lack of clear maintenance guideline that depicted the roles and responsibilities among different stakeholders.

## 5.4. Recommendations

The findings of this study are believed to have some recommendations for practice. The implication might show areas of intervention to improve the most wanted cobblestone road development in the study area. As we think of improving the internal road infrastructure, we need to look in to the recommendations involved. Accordingly, the following recommendations are made on the basis of the research findings and the conclusion.

1. The government at all level (Federal, Regional, Wereda and Keele) has created awareness to make the community to participate on the construction of the internal roads. But still a problem is observed on the part of the local government in creating awareness, space and opportunity to the community and other stakeholders to participate fully in preserving, managing and maintaining the roads periodically. It is expected to mobilize the community to evaluate and monitor the roads as well.
2. During Cobblestone road construction is done, other types of infrastructures like telecommunication wire installation, water pipe that can be lined across the local roads and others should be implemented before construction. This was the case that has practically been seen in the Cobblestone roads construction in Burayu town in particular and the whole country in general.
3. Its nature enables it to simply deteriorate or destruct if it is not constructed in quality as the stability of one cobblestone in its place depends on the stability of the other. Thus, it is the development committee to check and accept once the contractors is finished.
4. Based on the finding of the study and the researcher personal observation in the study confirmed that the significant proportion of the cobblestone roads quality in the sample Kebeles of the Burayu town have been deteriorated due to:
  - a. The uncoordinated activities among the stake holders (EELPA) Ethiopia Electric and Power Authority, Tele water sewerage authority have contributed a lot to reduce the quality of cobble stone road in the study area.
  - b. Lack of periodic maintenance and in sufficient community participation were found at the majority challenge and that could be an indicator of less quality internal roads (cobble stone) construction in the study area.
5. Directives or provisions that guide how to use the cobblestone roads should be in place as a legal framework or as a policy in order to save the roads from being deteriorated by any form of damages. However, as I observed in the field work or site, it indicated that the finishing or end of paved road is also not as such very smart to protect easily destructing of its nature.

6. The Local government especially the Burayu town Mayer together with the municipality should develop a sense of community ownership in order to preserve manages and maintains the development outcomes since the end users are its residents.
7. The last but not the least, the local government should take full responsibility to take any measure on the roads with representatives from the community or set up task force to manage and maintain the roads.

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# Appendix A

Addis Ababa University

Faculty of Business and Economics

Department of Public Administration and Policy

Questionnaire for Burayu Town Residents a study on “Analyzing the Practices and Challenges of Cobblestone Road Development in Burayu Town”.

## Dear Participants

I would like to express my heartfelt appreciation, in advance, for taking time to discuss the following issues. The questionnaire is designed for the preparation of a research for the fulfillment of M.A degree in Public Administration and Policy “Analyzing the Practices and Challenges of Cobblestone Road Development in Burayu Town”.

The purpose of this questionnaire is just to get information regarding the practices and problems of Cobblestone Road Development in the study area. Be confident that the information you provide will be kept and used only for academic research purpose. So you are kindly requested to give your genuine answer.

## Section I. General Information

1.1 Name of the Department \_\_\_\_\_

1.2 Sex Male  Female

1.3 Age (1) Below 20 years

(2) 21-30 years

(3) 31-40 years

(4) 41-50 years

(5) 51 and above

#### 1.4 Working Experience

- (1) Below 10 years
- (2) 10-20 years
- (3) Above 20 years

#### 1.5 Educational Qualification

- Below Grade 6
- Grade 7-12
- Certificate
- Diploma
- BA/BSC
- MA/MSc & Above

#### Section II. Basic Information of the respondents

1. Woreda: \_\_\_\_\_ Kebele: \_\_\_\_\_ Ketena: \_\_\_\_\_
2. In your locality:
  - a. Most of the roads are cobblestone Yes No
  - b. Most of the existing roads needs to be replaced with cobblestone Yes No
3. Do you think cobblestone roads are cost-effective Yes No
4. Do you think cobblestone roads serve for several years in the future Yes No
5. Do you think the usage of these roads must be regulated by law Yes No

### III. Quality of the Cobblestone Roads

Rate your agreement to the quality of the roads with the scale: 1=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5=. Please indicate your rating by putting the mark “X” considering yours as well as the opinion in your community.

No	Statement of Quality	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	It is difficult to easily displace a single stone from the road					
2	The size and shape of the stones adds the strength of the road					
3	The edges and sides of the road are strongly fixed with big concretes and cement					
4	The road is segmented with proper distance using concrete and cement					
5	Car speed barkers are properly applied and don't create difficulty during night walk					
6	The road is level and doesn't hold water during "Kiremt"					
7	Ditches and sewerage pipes are properly fixed					
8	It is not easy to spoil the road with dusts from either side of the road					
9	The road adds for the beauty in the village					
10	The road helped to move around more easily more in vehicles and on foot					
11	Compared with the previous roads, the cobblestone is by far much better					
12	The road will serve several years with little maintenance					
<b><i>The overall quality of the road is appreciable</i></b>						

#### IV. Benefits of the Cobblestone Roads

Rate the benefits that your community enjoyed out of the cobblestone roads with the scale: 1=Very Low, 2= Low, 3=Average, 4=High, 5=Very High. Please indicate your rating by putting the mark “X” considering yours as well as the opinion in your community.

No	Statement of Benefits	Very Low	Low	Average	High	Very High
1	Villages are better connected with the roads					
2	Villages become more economically viable places					
3	Provide safe walk way even during the night					
4	Reduced dust in dry seasons and mud during rainy season					
5	Provide easier access to trucks providing supplies: ex charcoal truck, pit latrine emptier					
6	Improved access to Ambulance, rented taxi, house car, school bus, etc.					
7	Children found playing field (ex: soccer, cycling)					
8	Adds to the beauty and sanitation in the villages					
9	Provide experience for other similar works					
10	Improved status of the village for living					
<b><i>Please state other significant benefits:</i></b>						

## V. Factors that pose damage to the Cobblestone Roads

Rate the significance of the factors damaging the cobblestone roads in your locality with the scale: 1=Very Low, 2= Low, 3=Average, 4=High, 5=Very High. Please indicate your rating by putting the mark “X” considering yours as well as the opinion in your community.

No	Factors damaging the roads	Very Low	Low	Average	High	Very High
1	Utility access construction such as water pipes and sewerage pipes					
2	Eclectic and telecommunication poles					
3	Improper ditches /resulted in water or mud overflow to the roads/					
4	Very heavy trucks – loaded with construction materials					
5	Improper waste dumps					
6	The landscape of major road projects					
<i>Please state other significant factors that could damage the roads:</i>						

## VI. Management Competency of the Local Government (Kebele/Woreda Administration)

The management by the local administration is the main actor in the cobblestone projects. In your view (the view of the community) how do you rate the competency and effectiveness of the Kebele/Woreda administration?

No	Management competency	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	road projects are according to the plan					
2	The projects are completed within time and budget					
3	The management effectively coordinate all actors					
4	Employees of the administration has the required expertise in mobilizing the community					
5	There is road maintenance arrangement					
6	The administration is honored by the community					
7						
<i>Please state any limitations about the Kebele/Woreda administration:</i>						

## VII. Challenges during the Cobblestone Roads construction

Rate the challenges observed during the cobblestone roads project in your locality with the scale: 1=Very Low, 2= Low, 3=Average, 4=High, 5=Very High. Please indicate your rating by putting the mark “X” considering yours as well as the opinion in your community.

No	Challenges during road construction	Very Low	Low	Average	High	Very High
1	Financial limitations					
2	Inactive participation of the community					
3	Poor project management and coordination					
4	Lack of ownership by the community					
5	Improper prioritization of each access roads					
6	Landscape of the locality					
7	Improper time/season of road construction					
8	Removing previous road materials					
9	Theft of construction materials					
10	Recruiting volunteer local committee member					
11	Lack of trust in officials managing finance					
12	Absence of prior community awareness					
13	Setting equitable contribution by families					
14	Timely collection of community contribution					
15	Conflict with the Addis Ababa City road master plan					

***Please state other significant challenges faced during the road construction:***

16. Other than the above challenges, what are the key challenges observed in construction and maintenance of cobblestone roads construction in Burayu Town?

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### VIII. Community Participation in the Cobblestone Roads construction Projects

Rate the community participation level during the cobblestone roads project in your locality with the scale: 1=Very Low, 2= Low, 3=Average, 4=High, 5=Very High. Please indicate your rating by putting the mark “X” considering yours as well as the opinion in your community.

No	Kinds of community participation	Very Low	Low	Average	High	Very High
1	The community participated voluntarily					
2	The community was highly participated					
3	The community has raised adequate financing					
4	The community opinion, knowledge, experience, expertise, and labor were adequately invested in the projects					
5	The community has sense of ownership					
6	The community will positively engaged in similar projects in the future					
7	The local committee members are honored by the community					
8	The community participates in the maintenance of damaged part of the road					
9	There is a sense of accountability not for causing damage in the roads					
10	The financial contribution by the community are fairly enough					
<b><i>In your view what are the problems/challenges observed in the community not to actively participate in the road projects:</i></b>						

## Section VIII

### Open Ended Questions in order to Support the Response of Closed Ended Responses

**Direction:** In answering the open ended questions, please be as brief as possible. In case you may have additional comments, please use the back side of the question paper by clearly indicating the number(s).

1. Who are the major stakeholders the cobblestone roads construction in Burayu Town?

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2. Who are the major actors for the cobblestone roads maintenance and management?

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3. Please briefly mention the major roles that the stakeholders are accomplishing?

3.1. During cobblestone roads construction

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3.2. After cobblestone roads construction (maintenance & management)

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4. Any other remarks or suggestions you want to add?

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## **Appendix B**

### **Addis Ababa University**

#### **Faculty of Business and Economics**

##### **Department of Public Administration and Policy**

Interview guide to be answered by members from community participation development agency, leaders of the Burayu Town Administration office, Officer from cobblestone project coordination office, technician from Oromia Roads Authority, and local development committee members

#### **Dear Participants**

I would like to express my heartfelt appreciation, in advance, for taking time to discuss the following issues. The interview is designed for the preparation of a research for the fulfillment of M.A degree in Public Administration and Policy “Analyzing the Practices and Challenges of Cobblestone Road Development in Burayu Town”.

The purpose of this interview is just to get information regarding the practices and problems of Cobblestone Road Development in the study area. Be confident that the information you provide will be kept and used only for academic research purpose. So you are kindly requested to give your genuine answer.

#### **I. Guiding Questions:**

1. Let us discuss about the overall current status of the cobblestone roads in Burayu Town.
2. What are the major features of internal road infrastructure development in Burayu Town?
2. How can the current status of the paved roads be described?
3. Who are the major stakeholders?
  - 3.1. For cobblestone roads construction

3.2. For maintenance

3.3. For management

4. What is the general effect that the cobblestone roads have on Burayu Town?
5. How do you see the priority of services given by the roads? For vehicles, people (pedestrians, residents) or both etc.?
6. What will be the future fate of the roads, who is responsible to owe the roads, and to which particular body can we report for any event on the roads?
7. What are the main problems observed in the overall situations, what should be the corrective actions taken and what preconditions are needed to sustainably use these roads?
8. What are the key challenges observed in construction and maintenance of cobblestone roads construction in Burayu Town?

## **II. Observation Checklist:**

1. Field sites visit of the cobblestone pavement roads will be conducted at the study area for some additional information to triangulate the information found from other sources.
2. In some selected *Woreda's* and kebeles of Burayu Town.
3. Taking photographs of some cobblestone roads will be taken to support the analysis.