

***The Role of Mobile Phone in Improving Rural
Livelihood and Development in Hallaba Special Wereda,
South Nations Nationality and Peoples Regional Government
(S.N.N.P.R.), Ethiopia.***

***Project Report Submitted to Indira Gandhi National Open
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CERTIFICATE OF ORIGINALITY

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Acronyms

ADA	Agricultural Development Agency
CDMA	Code Division Multiple Access
FDRE	Federal Democratic Republic Ethiopia
GSMA	Global System for Mobile Communications Association
HEW	Health Extension Worker
ICT	Information and Communication Technology
ITU	International Telecommunications Union
KMs	Kilometres
RAP	Regional Office for Asia and the Pacific
SMS	Short Message Service
SNNPRS	South Nation Nationalities and People Regional State
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The livelihoods of millions in the rural area of the developing countries especially in Africa depend heavily on agriculture and small scale businesses. On the other hand, lack of technology and market information has been given as the major reasons for the low productivity in these sectors (Okyere & Mekonnen, 2012). However, the recent development and use of Information Communication Technology (ICT) is playing a critical role in bringing about social and economic development all over the globe. ICT has the potential to bridge the digital divide and to support development in developing countries by providing access to information and by building communication lines among people around the world (Furuholt, 2009). Yet, high cost of available technologies, inadequate infrastructure, low ICT skill, poor and expensive connectivity, inappropriate ICT policies, and language barriers are the main challenges and factors that influence the use of ICT in the rural area (Munyua, 2007). The problem even becomes worse when the majority of the rural population is illiterate. These issues raise the question of finding out the appropriate ICT tool. Fortunately, mobile cell phones are suitable for improving livelihoods of the rural poor than other technologies due to the reason that mobile phones are increasingly accessible to lower-income groups (Rashid & Elder, 2009).

As a result, in developing countries mobile phone is becoming the most important mode of communication and the major tool connecting the vast majority of the low-income population to the information society (UNCTAD, 2007). As mobile service penetration across Africa begins to exceed that of other core infrastructure, the mobile industry is beginning to have an increasingly significant impact on society (GSMA, 2011). In addition to improving communication, the mobile phone is facilitating improvements in different aspects of life such as agriculture, banking, education, healthcare and the empowerment of women (GSMA, 2012).

Mobile phones, due to their accessibility, could also help to reduce physical and social marginalization of poor regions and people by facilitating communication that is not restricted by distance and time, thereby overcoming barriers of space and social standing (Braun & Torero, 2006). The contribution of mobile phone to reduce poverty and improve rural livelihoods through expanding and strengthening social networks, cut down travel costs, and secure better markets and prices (Sife, Kiondo & Macha, 2010).

1.1.1. Mobile phone in Ethiopia

Ethio Telecom, though named differently in different times, is a state owned monopoly of telecom network and services in Ethiopia. Established in 1894, the company had undergone through series of stages of development and institutional arrangements.

Currently the company envisions an information based Ethiopia society where all people have access to information infrastructure on equitable basis to be an internationally competent and quality service provider.

At present, the company gives mobile telephone, fixed telephone (including CDMA), internet, data, fax and other value added services, which are being delivered to customers mainly by the company itself and some of them by private business organizations through outsourcing.

Mobile phone service is introduced as of 1999 by the previous Ethiopian Telecommunication Corporation. Number of subscribers is increasing dramatically every year and now it is estimated that 24 million subscribers are using it. The Mobile network was significantly expanded 4 years ago all over the country, covering 64% of the country with great focus on the rural areas. Moreover, presently the company is expanding the network with a cost of more than 1.6 billion dollars to virtually reach the coverage to 85% of the country (<http://www.ethiotelecom.et>).

1.1.2. Telecom in SNNPRG

According to the annual report of Ethio Telecom, South Nations Nationalities and Peoples' Regional State (SNNPRS) is one of the leading Regions with the number of mobile users as it is a land for cash crops and other factors (Ethio Telecom, July 2013). Hallaba Special Wereda, the place where this study is conducted, is also among the leading cash crop areas in the region of which many rural farmers are believed to have mobile phones than other parts of the region, though not documented, due to better mobile network coverage, awareness and relatively better purchasing power of the society.

1.1.3. Perception about mobile phone

Previously, mobile phone is meant to the rich, urban and educated population. But now such attitude is already changed all over the country and many rural people are using mobile phones for different purposes. However, there are perceptions about the

users of the mobile phones: some say it has positive contribution for the improvement of livelihood of the rural population and others say, it little or no contribution for same.

Thus, this study was initiated to explore whether the expansion of mobile phone in the rural areas has positive contribution for the improvement and development of the livelihood of the rural population or not.

1.2. Statements of the Problem

There is great agreement among scholars that the reduction in communication coordination costs associated with mobile phone has tangible economic benefits, improving agricultural and labour market efficiency and producer and consumer welfare (Aker & Mbiti, 2010). An emerging body of research also shows the adoption and use of mobile telephone in rural area of developing countries have positive economic, social and political effect, even though estimates of effects vary from country to country or place to place (Hosman & Fife, 2012).

On the other hand, according to Hosman and Fife (2012) there is a general perception that since most of least developed countries rural societies (especially farmers) are illiterate, they face problem to communicate, access, process and use information to improve their livelihood via mobile phone. This view is also seems unexceptional even in Ethiopia as it is common to hear comments like “having a mobile phone contributes almost nothing to the improvement of livelihood or economic growth of farmers except to make calls for social relationship, which in turn costs farmers to the level significantly deteriorating their economic position, and wasting their time while they use it to listen radio and music, play games, use camera and recording.

Accordingly, this study explored whether the expansion of mobile phone in the rural area of Hallaba Special Wereda contributed for improving the livelihood and development of the society or not by addressing the following questions:-

- What are farmers' major reasons for having mobile phone?
- For what purpose the target population actually uses the mobile phone?
- Do target populations think mobile phones have positive contribution to the improvement and development of their livelihood?
- If so, what are the major contribution areas of having mobile phone?
- If no contribution or having reverse effect, what are the major reasons?

1.3. Objectives of the Study

The Government of Federal Democratic Republic of Ethiopia (GoFDRE) has already started implementing a series of five year Growth and Transformational Plan, by giving due attention for the rural development in order to improve the livelihood of the rural people and eradicate the prevailing poverty by transforming current backward agricultural sector into more productive, efficient, and life changing business for the country in general and the rural population in particular. Thus, recognizing the strategic importance of the rural communities to the socio-economic development of the country, the Government of FDRE has also given great attention to expand telecom infrastructure, especially that of mobile phones in the rural area. Based on this, the study has the following general and specific objectives.

1.3.1. General objective

The study explores whether the expansion of mobile phones in the rural areas contributed for the improvement of the livelihood and development of the society or not.

1.3.2. Specific objectives in the area of study

- To identify reasons why the rural people own mobile phones
- To assess the purpose for which the target population actually uses mobile phones
- To assess whether the target population believes that mobile phones have positive contribution for the improvement of livelihood and development
- To identify the major contribution areas of having mobile phones
- To identify the major reasons for the negative effect of mobile phone expansion against the improvement of the livelihood and development of the rural people, if so

1.4. Significance of the Study

In addition to academic interests the study will have the following benefits

- It helps to know mobile phones are actually contributing for the development of the rural society as thought by the government or not
- If not contributing, it helps to identify the reasons why
- It gives ideas for policy makers to identify measures and create awareness about using mobile phone that will boost the effective utilization and expansion of mobile phone infrastructures in rural areas

1.5. Research Methodology

1.5.1. Research design

In this study, a descriptive survey method was used. In short a descriptive survey means to describe phenomena as they exist. Descriptive studies generally take raw data and summarize it in a usable form. In the study both quantitative and qualitative methods were utilized to clarify concepts, characteristics, descriptions, counts and measures to

demonstrate implications of the issue under question. Data was collected using structural interview and questionnaire.

1.5.2. Nature and source of data/ information

Relevant data or information was collected both from primary and secondary sources.

Primary Sources: Primary data was collected directly from respondents using structural interview and questionnaire. The data was gathered from the sample of 120 farmer respondents who owned mobile phones in the target area.

The target area was composed of the following 8 rural Kebeles of Hallaba Special Wereda having mobile network coverage, namely, Huletegna Choroko, Hamata, Gedeba, Guba, Hansha, Holegeba Kuke, Gerema, and Besheno. Sample of 15 respondents were taken from each Kebeles. Moreover, 6 respondents were selected as key informants from 6 different offices of the Special Wereda including the Chief Administrator, officials from Agricultural office, Health office, Wereda Court, Education office and Police office.

Secondary Data: Secondary data was also gathered through review of related literatures, web sites, journals and published reports.

1.5.3. Sample and sampling techniques

The study was conducted in the SNNPRS of FDRE which is composed of 14 Zones and 4 Special Weredas. Of which Hallaba Special Wereda was selected purposely. The estimated number of population in the Wereda is 296, 129. Hallaba Special Wereda is located 323 KMs and 90 KMs away from Addis Ababa (capital city of Ethiopia) and Hawassa (the capital city of the Region) respectively. Besides, the Wereda

is located on the high way from Addis Ababa to Shashemene - Wolayita - Arbaminch road. Similar to most parts of the country, 84% of the people live in rural area basing its livelihood on agriculture. The majority of the farmers in the area are producing maize, wheat, sorghum, pepper, red kidney beans and teff. Among these pepper, maize and red kidney bean are the major cash crops of the area.

The 8 rural Kebeles were selected based on the availability of mobile network coverage. Unfortunately, the exact number of mobile phone users in each Kebele is not known even by the operator. Consequently, the researcher used purposive sampling to choose respondents. Based on personal experience in the sample area that there are small numbers of women who are using mobile phone service, they represent only 20% of the total 120 respondents. As mentioned above, respondents from different offices of the Special Wereda were selected based on their position in their respective offices.

In general, all the above mentioned 120 farmers were considering their responsiveness for what purpose they were using their mobile phones. Also, governmental offices of the Special Wereda were chosen based on their frequent contact with the rural population especially farmers.

1.5.4. Tools and techniques

Structural interview and questionnaire were used in the study with a view to gather information from the target respondents. The form of the questions was closed ended and check list. Questions were prepared with clear and easily understanding manner both in Amharic (the country's official language) and Hallabigna (local language in the study area). Moreover, Enumerators read questions for those farmers who are illiterate.

In order to ensure the reliability and validity of the survey, a pilot test was conducted in order to provide insight on the kind of information that will be collected as well as to know whether the instrument is administrable. The test with 10 respondents was done in two Kebeles to check on the clarity of the questions and the general format of the survey so as ascertain if all information needed were included. The shortcomings revealed through pilot survey were addressed and adjusted accordingly.

1.5.5. Methods used for data collection

The quantitative data was collected by employing 16 enumerators; fluency in the local language, experience in data collection and good knowledge about research Kebeles and villages were considered in recruiting enumerators. The researcher provided one day training to enumerators using well developed manual and follows up their activities closely. The researcher himself collected data from respondents of six different offices of Special Wereda.

1.5.6. Data Handling and Analysis

Primary data collection instruments, questionnaire and interview, were used as basic tool for collecting field data. Questionnaire was used to gather information from farmers and structural interview was applied for those respondents from selected governmental offices of Special Wereda. During the data collection, initially the purpose of the study was clearly expressed to the respondents with assurance that their response was kept anonymously. Also they were informed that they may not write their names on the questionnaire while returning the questionnaire to research assistances (enumerator) or while interviewed. Moreover, to avoid the drawbacks of the questionnaire method (e.g. low return rate, misunderstanding, misinterpretation, etc.) as much as possible; the researcher and his assistances were in person in all selected sample areas, despite the questionnaire is self-explanatory and easily understandable manner and gives

explanation for respondents about the questionnaire. The analysis was done using frequency and percentages to show the relationship between the use of mobile phones and improvement of livelihood and development of the rural society.

1.5.7. Findings and conclusions

Finding was summarized in the form of frequency or percentage and conclusions is drawn from the findings.

1.6. Scope of the study

Due to the time and resource constraint, the scope of the study was limited to eight Kebeles in Hallaba Special Wereda of the SNNPRG of the Federal Democratic Republic of Ethiopia (FDRE).

1.7. Limitation of the study

The study was encountered with the following limitations

- Due to lack of documented data about mobile phone users, less infrastructural development and transportation problems purposive sampling technique was used to select the sample Kebeles and respondents in the study area
- Since the research was conducted in one Wereda only, it might not represent facts all over the country
- It didn't include opinions of farmers who have not their own mobiles
- It didn't include residents that were engaged in other activities (e.g. small business, employed, daily labourers . . . etc.). The focus was on those who based their life on farming

1.8. Definitions

Livelihood: a *livelihood* comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. *Livelihood* is defined as a set of activities, involving securing water, food, fodder, medicine, shelter, clothing and the capacity to acquire above necessities working either individually or as a group by using endowments (both human and material) for meeting the requirements of the self and his/her household on a sustainable basis with dignity.

Improvement of Livelihood: is meeting the requirements of the self and he or her household on a sustainable basis with dignity.

Rural development: generally refers to the process of improving the quality of life and economic well-being of people living in relatively isolated and sparsely populated areas. Rural development aims at finding the ways to improve the rural lives with participation of the rural people themselves so as to meet the required need of the rural area.

1.9. Organization of the Paper

The paper is organized into four chapters. The first chapter deals with introductory part consisting of background of the study, statement of the problem, objectives of the study, methodology, scope and limitation of the study, significance of the study. The second chapter reviews literatures related to the study. In this chapter various theoretical concepts that relates analysis of collected data, and interpretation of the analyzed data is presented in the third chapter. And finally, the fourth chapter presents summaries of major findings, the conclusions and the recommendations. The thesis also consists of other formal sections like References, Appendixes, etc.

CHAPTER TWO

LITERATURE REVIEW

2.1. Mobile Phone in the Rural Area

In developing countries most of the poor peoples, which lack basic services and infrastructures, are living in rural areas. As a basic rural service, access to information at right time and in the right form helps the rural poor society to make informed decisions on critical issues. Also as a means, access to relevant information and knowledge improves efficiency and productivity; enhances social services delivery; increases access to market opportunities; and improves government performance, among others (UNDP, 2001). This can be realized through adopting information technology in the rural area for socio economic development. Information technology has been identified as one of the determinants of growth in the globalizing economy where the world is moving towards knowledge-based economic structures and information societies (Oshikoyo & Hussain, 1999). This development trend provides developing countries with opportunities and challenges for making progress with accelerated growth and poverty reduction.

In many developing countries the agricultural sector plays a significant role in the national economy. Developing countries will continue to rely heavily on the agricultural sector to ensure employment for the rural poor and food security for growing populations as well as to meet challenges brought on by climate change and spikes in global food prices (World Bank, 2012). In Africa, agriculture provides a livelihood for most of the 75 percent of the people who live in rural areas. Unfortunately, the rural

areas in Africa have the largest concentration of poverty and food insecurity. One of the causes of the low incomes in rural Africa is the low productivity of agriculture. Therefore, any attempt to reduce poverty should pay particular attention to transforming the agricultural sector, especially sustained improvement of land and labor productivity in the sector, facilitated by remunerative markets. Lack of technological and market information has been given as the major reason for the low productivity in African agriculture. ICT can play a crucial role in benefiting the resource-strapped farmers with up-to-date knowledge and information on agricultural technologies, best practices, markets, price trends, and weather conditions (UNDP, 2012a).

Despite the studies reviewed that ICT has positive impact for rural development and poverty reduction, the expansion of ICT in the rural area is still facing developmental challenges. In the recent review of the Global Information Technology Report (2013), a still-costly access to ICT infrastructure, relatively low levels of skills with low educational attainments, and unfavourable business conditions for entrepreneurship and innovation are hindering the region's capacity to fully leverage the potential of the increasingly available ICT infrastructure (Osorio, Dutta, & Bruno, 2013). Generally, the lack of ICT in the rural area of the developing countries affected the poor people from utilizing it for the improvements of their livelihood and rural development.

Set against these conditions of ICT transformation for rural livelihood and development, the advent of the mobile phone is stimulating a revolution in rural connectivity for small-holder farmers and other small-scale rural producers in developing countries. This is resulted in the rapid growth of mobile phone networks and penetrations in developing countries which makes it to be particularly important for development. Advantageously, Mobile as an ICT tool has attributes of access, reach, adoption, interaction, costs, efficiency and viable option for the poor than other ICT

tools like Internet and others (Dhaliwal & Joshi, 2010). As a result, mobile phone is widely recognized and become the predominant mode of communication in the rural area of developing countries. In recent years, the mobile phone has emerged as an important development tool (Islam, 2011).

The expansion of mobile network provides a unique and unparalleled opportunity to give rural smallholders access to information that could transform their livelihoods. ICT such as mobile phones can have an impact on rural livelihoods and thereby on poverty in rural communities in developing countries (ITU, 2004). Besides, it is seen as a device that has the potential to break the rural–urban developmental gap by delivering information on a variety of economic and social issues (Aker & Mbiti, 2010). As a result, the importance of mobile phone service is arguably the most ubiquitous modern technology for accessing information in improving the livelihood then to reduce the poverty in the rural area and development is increasingly getting due attention.

There are many reasons why mobile technologies are expanding at such a rapid pace in developing countries (UNDP, 2012b). Mobiles offer real-time, interactive voice communication, short message service (SMS) and access to information for people who previously had little or no access to any affordable communication channels. Mobile phones are also portable, which is important in many developing country contexts, and among otherwise marginalized populations such as migrant or rural workers. Mobile phones can bolster personal security by keeping people in touch with each other in precarious situations such as natural disasters, conflicts, criminal or gender-related violence. Mobiles also have relatively low physical infrastructure requirements and can thus easily reach areas in a more cost-effective fashion than other ICTs such as the internet or fixed phone lines. In some places, mobile devices are simply the only option available. And where there are no electrical grids, base stations are sometimes powered

with low-cost generators that require low-energy inputs. In addition, unlike other digital devices, mobile phones only require basic literacy, and therefore can be used by a larger segment of the population than say, computers, which usually demand higher skill sets

According to the researchers Dhaliwal and Joshi (2010) on their study of the Mobile Phones Boon to Rural Social System, reported the socio economic benefits of mobile phone for the rural people. It can effectively reduces the distance between individuals and institutions, making the sharing of information and knowledge easier and more effective, for strengthening social networks of the rural society and empowering individuals. Besides, mobile phone offers some unique opportunities, such as it provides global communication channel to rural communities, it extends the impact of established rural media, such as rural radio, it helps in making the local content available to the rural people, and it makes rural services more efficient (logistics, coordination, etc.) and cost-effective .

Although many research studies found mobile technology has positive impact on the rural development through accessing and flow of information, there are some evidences that revealed the gap in the relation to the use of mobile phones for the development of the rural area in the developing countries. In the rural area of such countries, many people simply do not know what is available, how to access and use what is there, what rights and risks are involved and what can be achieved with mobile applications and other digital technologies (Joyce, 2010). As a result, in the rural area mobile devices are often seen as being for conversation and entertainment, rather than as a potentially empowering tool. Besides, the problem of rapid implementation of new ICTs often on the basis of little understanding of their development impact (Heeks, 2010). Fortunately, there is a lack of understanding of the interrelationships between the

technological artefact and socio-economic development processes, as well as assessment of the outcomes that arise from its use.

In rural parts of developing countries, which have low human development, mobile phones could actually undermine development if they only create further expenses for poor people (Horst & Miller, 2006). Without considering it in the strategic thinking, however, mobile phones can become an extra expense for the poor with no significant development achievements. ICT's impact on economic growth depends not only on its own level, but also on the level of other complementary factors (Edwards, 2002). Perhaps the most important of these factors is the level of human skills and capabilities required to make use of the new technologies.

However, accelerated communication of information using mobile phone in the interplay with other factors in the rural area, can increase productivity; enhance access to services; widen markets; simplify transactions; substitute for physical transport; prevent crime; improve governance, and create new socio-economic opportunities, among many other benefits (Sife et al., 2010).

2.2. Mobile for Improvements of Rural Livelihoods and Development

The rural community needs mobile to communicate and gather information for many different purposes, for instance, to get support and assistance from other persons, to exchange information about friends, family and work and to co-ordinate social as well as business activities. According to Information for Development program (InfoDev) (2006), ICTs such as mobile phones can have an impact on livelihoods and thereby on poverty in developing countries, can contribute in improving increased opportunities to access resources and use capabilities through improved access to information, empowerment through information about choices that affect themselves, decreased

vulnerability to risk due to the possibility to send and receive information. The researchers Sife et al. (2010) have done a survey on the contribution of mobile phones to rural livelihoods and poverty reduction in Tanzania. They concluded that the mobile phones benefited the rural people for maintaining social relationship through expanding and strengthening social networks. In addition, similar result was found in India by Mehta (2013) who assessed the impacts of mobile phones in rural area. He concluded that making communication with mobile phone is substantially cheaper and promotes social interaction. He also found that mobile phone enables the rural people in the issues of changes in networks and social relations, and this comes out in the study as quite prominent effects of mobile phones.

In many research studies, basically, the link between mobile phones, livelihoods and poverty stems from the recognition that information is a critical factor for development purposes. The studies on mobile for development by UNDP(2012b), reported that mobile phone for accessing information in the rural area of the developing countries can enhance pro-poor development in sectors such as health, education, agriculture, employment, crisis prevention and the environment that are helping to improve human development efforts. As information becomes more accessible through the use of mobile devices for the rural people in performing their livelihoods activities, people are gradually moving toward more efficient ways of improving their livelihoods. It becomes best for enabling the farmers to cope, with providing useful and reliable information at the right time which assists them in making complex decisions, and then impacts the livelihoods of their families and the broader society Improving farmers' prompt access to that information is paramount to reducing poverty and feeding more people (Regional Office for Asia and the Pacific, 2012). Moreover, mobile phone usage

can help improve the economic status of the rural poor people by providing timely information on farming, jobs or the labour market, trading and credit (Mehta, 2013).

Regarding Health and Education, mobile phone provides information on education, health service and facilitates the users to communicate with nearest one which ensures social bondage within the rural area of developing countries (Rahman, 2010). Moreover, it can help to improve life skills and social capital by providing timely information on healthcare, education, government schemes, family and friends (Mehta, 2013)

For fosters broader transparency and social accountability, mobile technologies are also strengthening the demand side of governance by providing people with critical tools to engage with public institutions and demand more and better services (UNDP, 2012b). The report also includes that mobile technologies can open new, interactive communication channels that help governments engage people in policy and decision-making processes, expand stakeholder participation, offer greater access to public information, and foster targeted service delivery to the poor and marginalized if the technology is strategically deployed.

Souter, Scott, Garforth, Jain, Mascarenhas, and McKemey (2005) assessed the economic impact of telephones on rural livelihoods in Mozambique, Tanzania and India. The study reported that the impacts of telephones on peoples' livelihoods were more evident in emergencies, social networks, and saving costs and time. The results of study also show the importance of information to people's livelihood and general well-being, ranging from information about family members, to information related to their livelihood strategies (crops management, remittance, market prices, government and legal requirements, etc.). They confirm the importance of interactive communication in

order to engage in dialogue with others, whether in social or business transactions. Particularly important are those interactions linked to social capital; conversations between members of family or within a wider social network. The perceived benefits mobile for social relation is also supported by the studies of Sife et al. (2010) found that the phones increase people's ability to deal with emergencies to avoid the vulnerability and increase the efficiency of travel and business activities.

According to the study of Masuki, Kamugisha, Mowo, Tanui, Tukahirwa, Mogoi, and Adera (2010) assessed the role of mobile phone in improving communication and information for agricultural development. They found that farmers are more excited about using the phone to access information on agriculture, natural resources management and marketing. They concluded that mobile phone helps the farmers for accessing better price information from different market places which enables them to make decisions on the best time to sell crops and livestock. This is also confirmed by Rahman (2010) who studied the effects of ICT in alleviating poverty in rural Bangladesh focused on mobile for academic purposes. The study revealed that mobile phone develop the market channel through which poor villagers get easy access to price information of different commodities, therefore, increases villagers bargaining power and freed them from middlemen influence. Furthermore, he also reported with respect to health and education that mobile phone helps the rural people access to information for better education and better health service which increase their productivity and ensures better earnings which results raise in income.

On the other way; despite many studies reported the finding on the growing potential of mobile phones for improving the livelihood and rural development, the precise ways and extent to which these technologies contribute to sustainable livelihoods and poverty reduction in developing countries are still debatable. Accordingly, there are

studies confirmed on some adverse effects of mobile phone on the rural people for improvement of livelihoods.

The researchers De Silva and Zainudeen (2007), Hassen and Semkwiji (2011), Hosea, Hidayat, and Matti (2008), Sife et al. (2010), and Souter et al. (2005) found some adverse impacts of the mobile phone on rural people for the improvements of their livelihoods. According to Souter et al. (2005) found that except those who are engaged in business activities and with higher economic status, the other categories, not see any economic benefits with using mobile phone. The study also revealed that there is no correlation in any of the three countries in Mozambique, Tanzania and India between changes in household income and frequency of mobile use or perceived change in access to mobile phone. Similarly, De Silva, H. and Zainudeen, A. (2007) who assessed the Poverty Reduction through Telecom Access at the Bottom of the Pyramid Sri Lanka found that access to telecom is not necessarily seen as increasing the earning and cost saving potential perhaps because people at the bottom poor do not use phones directly for business purposes. The study revealed that the respondents' direct access to mobile phones has worsened their ability to earn or save. Moreover, according to Hosea et al. (2008) who studied the Mobile Phones and Poverty Alleviation a Survey Study in the Rural Tanzania. They found that majority own/use mobile phones for mainly maintaining relationships than being used for economic or business purposes. Furthermore, Sife et al. (2010) who found that mobile phone has no important contribution to improve the incomes of rural households, the same result is found by Hassen and Semkwiji (2011) who studied the Role of Mobile Phones on the Sustainable Livelihoods in rural Tanzania. They disclosed that economically 61% of the respondents believe that using mobile phone reduces the household and individual resources in financing on it which could be for other important needs like food and health.

CHAPTER THREE

FINDING AND DISCUSSION

3.1. Respondents' General Information

The general information of the study population is described in terms of age, sex, marital status and educational level. All the mentioned aspects were considered to be important for the study since they would provide the general characteristics of the respondents who own and use mobile phones. Table 1, portrays the demographical data of respondents.

Table 1: Demographic Data of Respondents

Demographic Factors	Category	Frequency (N)	Percent (%)
Age	18-35	67	56
	36-50	46	38
	Above 50	7	6
Sex	Male	96	80
	Female	24	20
Marital Status	Single	35	29
	Married	76	64
	Divorced	4	3
	Widowed	5	4
Educational Status	No formal education	34	28
	Primary and Junior Secondary School(Grade 1-8)	58	48
	Senior Secondary School	25	21
	College/University	3	3

Source: Survey data, 2014.

As mentioned before, from each Kebele 15 respondents were selected, of them 12 were males and 3 were females. Thus, 96 males and 24 females were surveyed successfully.

The Age of the respondents' is important to identify which age group is using the mobile technology in the target area. Among the respondents' age group, 67 (56%) belongs to the age group 18 – 35 who are relatively young, followed by 46 (38%) who belong to the age group 36 – 50 who are relatively adults and 7 (6%) were above 50. Regarding the marital status of respondents, 76 (64%) married, 35 (29%) single, 4 (3%) divorced and 5 (4%) widowed. Thus, most of the mobile respondents are married.

Educational status was also surveyed which is expected to indicate the respondents' access and usage of mobile phones. Of them, 34 (28%) have no formal education, 58 (48%) attended Primary and Junior Secondary School, 25 (21%) attended and graduated from Senior Secondary School, and 3 (3%) were College/University graduates.

From the survey result, we can deduct that almost 72% respondents have attended different level of education from primary to college/ university.

3.2. Mobile Phone Ownership and Ability to Use It

How long the respondents have been using mobile phone is important to get relevant information from them. Thus, in the study the respondents were asked how long they have been using it. As indicated in Table 2 below, 13 (11%) were using it for less than 1 year, 58 (48%) were using from 1-2 years, 45 (38%) were using from 2-5 years, and 4 (3%) were using for more than 5 years. Almost 107 (89%) respondents have been using the phone for more than a year.

Table 2: Duration using Mobile Phone

Duration using Mobile Phone	Frequency (N)	Percent (%)
Less than 1 year	13	11
1-2 years	58	48
2-5 years	45	38
More than 5 years	4	3
Total	120	100

Source: Survey data, 2014.

Provided with multiple responses, the respondents were asked for what major reason/s they owned their mobile phone. In the study as indicated in the Table 3, it is found that most of the respondents 113 (94%) owned their mobile phone to use the basic services such as making voice calls, browsing the internet or to use for SMS service and 58 (48%) of them owned their mobile phone to use it for other services like Radio/Music, Game, Torch light, Camera, Calculator, Time etc. The study also found that, very few respondents 3 (3%) owned to maintain their status or just because others do it.

The finding from in-depth interview made with the head of the selected Wereda government offices, revealed that the rural people specially the farmers owned the mobile phone since it is the modern technology they were interested to adopt it easily for using as a means of communication device mainly for voice calls to access information needed for their day to day activities. Besides, there were also some rural people, not all, who used the phone for additional service like listening radio or music.

The finding of this study confirms the previous study made by Sife et al. (2010), and Hassen and Semkwiji (2011) who found that majority of people in the rural area own and use mobile phones as a major means of communication and accessing

information. They also reported that the users are mainly using voice calls and SMS than others. The finding also suggests 94% of respondents use mobile phone's basic service such as voice call and SMS. 58 (48%) of the respondents also use its other services.

Table 3: Major Reasons to Own Mobile Phone

Major Reasons to Own Mobile Phone	Frequency (N)	Percent (%)
To use its basic services (Making voice calls, browse Internet or use it for SMS)	113	94
To use its other services (Radio,/Music, Game, Torch light, Camera, calculator, Time etc)	58	48
To maintain status or just because others do it	3	3

Source: Survey data, 2014. Multiple responses were permitted.

Although the majority of the respondents have owned their mobile phone for using basic services such as making voice call, browsing internet and SMS, the difficulties in using mobile phone was also seen in the study. With providing the multiple responses, the respondents were asked for the difficulties of using mobile phone for basic service such as making voice call, browse Internet or use it for SMS. Among them (Table 4), 96 (80%) and 63 (53%) responded that they have difficulties in using their mobile phone for browsing the Internet and exchange SMS respectively. No respondents faced difficulty in using it for voice service.

Table 4: Difficulty in Using Mobile Phone Service

Difficulty in Using Mobile Phone Service for	Frequency (N)	Percent (%)
Voice	0	0
Internet	96	80
SMS	63	53

Source: Survey data, 2014. Multiple responses were permitted.

The degree of illiteracy and lower level education of most farmers (76% as shown in the Table 1) is among the major causes for difficulties in using the Internet and SMS. Similar study in the South West rural Uganda by Masuki et al. (2010) revealed that due to the illiteracy and language barriers, the rural community faced similar difficulties.

3.3. Purpose of Using Mobile Phone

3.3.1. Voice call

To know the respondents purpose of making calls using their mobile, they were provided with multiple reasons that probably motivate them to make calls and asked for what purpose/s they are making calls. The study result shows that, social motive tops the list. Using mobile phone for the purpose to call for family, friends and relatives dominate over other purposes which account for 111 (93%) of respondents. From the multiple response summarized in the Table 5, 78 (65%) also use it to facilitate agricultural activities, 67 (56%) for security reasons, 66 (55%) for health and education, 65 (54%) to get information about the market, 54 (45%) for other governmental and political activities and 41 (34%) for religious activities.

Moreover, the interview made with the concerned Wereda Government Administrators, revealed that most farmers in the rural area are mostly using mobile phone for social purposes. Also they said that the number of farmers who are using it for coordinating agricultural activities, market search, security and emergency reasons, for health and education purpose are increasing from time to time.

The finding of this study is similar with other researchers that rural people value telephones very highly for exchanging social information, particularly to keep in touch with scattered family members (Souter et al., 2005). Similarly, Masuki et al. (2010) and

Rahman (2010) independently found similar results in their study that the rural people use mobile phone mainly for the purposes of social relations and market information.

Others like Hassen and Semkwiji (2011), Hosea et al (2008), and Mehta (2013) independently reported similar findings.

Table 5: Purposes to Make Calls

Purposes to make calls	Frequency (N)	Percent (%)
To call for family, friends & relatives	111	93
To facilitate agricultural activities	78	65
Security reason	67	56
Health and education	66	55
To get information about the market	65	54
Other governmental and political activities	54	45
Religious activities	41	34

Source: Survey data, 2014. Multiple responses were permitted.

To identify the frequency of calls for each reason mentioned above the respondents were asked to rate how often they use their mobile phone. The response similarly shows respondents are frequently using their mobile for social relationship than other activities which improve their livelihood.

3.3.2. Call priority

Asked for their call priority, social relationship was the first reason scoring 66 (55%) of the respondents, followed by 53 (44%) of the respondents who said they primarily use their phone for activities which improve their livelihood or economic growth.

Table 6: Mobile Phone Call priority

Mobile Phone Calls Priority for	Frequency (N)	Percent (%)
Activities maintain social relationship	66	55
Activities improve livelihood or economic status	53	44
Showing social status	1	1
Total	120	100

Source: Survey data, 2014.

The finding from the qualitative interview also reveals the same results. Thus, the result coincides with the researchers conducted by Goodman (2005) and Hosea et al. (2008) who affirmed mobile phone in the rural areas are mostly used for facilitating social relationships than for some economic benefits.

3.3.3. Mobile phone and its other services

Almost half of the respondents (Table 3) own mobile phones also to use their additional features like Radio /Music, Game, Torch light Camera, calculator, etc in addition to their basic service. Knowing this helps to understand the impact on the improvement of livelihood or productivity of the rural people in the target area. In the study, the respondents were asked how regularly they have been using their mobile phone's other services mentioned above. The finding of the study as indicated in the Table 7, shows that among the respondents, 40 (33%) used less than an hour a day, 36 (30%) used 2 - 4 hours a day, 32 (27%) never used such services, and 10 (8%) used them for more than 4 hours a day. From the study, we can understand that 86 (72%) have been using the other functions of mobile.

Table 7: Using Mobile Phone for its other Services

Using Mobile Phone for its other services	Frequency (N)	Percent (%)
Never use them	32	27
Less than an hr a day	40	33
2 – 4 hrs a day	36	30
More than 4 hrs a day	10	8
Total	118	98

Source: Survey data, 2014.

Respondents were also asked the time when they use the other services mentioned. As the finding shown in the Table 8 reveals 45 (38%) were use during leisure times, 36 (30%) during both working and leisure time, and 5 (4%) during working hours.

Table 8: The Time when respondents use other services

When they use?	Frequency (N)	Percent (%)
During working hours	5	4
During leisure times	45	38
Both during work and leisure hours	36	30
Total	86	72

Source: Survey data, 2014.

Moreover, respondents were asked the time when they use listen radio or music if they have been using it with their mobile phone. The finding of the study as presented on the Table 9, shows 53 (44%) of them listening while interposing their jobs, 24 (20%) listening while working, and 9 (8%) listening while sitting idle. From the result, we can see that most of the respondents' are using their mobile phone for listening radio or

music while they are on job. This implies that mobile phone serves as entertainer. Conversely, interposing their job to listen radio or music may affect negatively their effort to improve their livelihood or their productivity.

Table 9: When listen radio or music

Perceived time for listening radio/music using mobile phone	Frequency (N)	Percent (%)
Sitting idle	9	8
While working job	24	20
Interposing job	53	44
Total	86	72

Source: Survey data, 2014.

Similarly, the above result is also supported by qualitative finding from officials of Wereda government offices. The finding disclosed that farmers, especially those who have awareness have been using mobile phones for their other services.

The finding supports the previous study of Mehta (2013) which assures mobile handsets are used as much for ‘entertainment’ as they are for communication. Regarding mobile phone for listening radio, the study supports Montez (2010) who surveyed the mobile communication in Zambia and found those lower income groups are increasingly practicing mobile phone for radio listening purpose especially for the news and information.

3.3.4. Mobile phone and their service charge

The respondents were asked the average per month expense that they are spending for their mobile phone. Of the respondents as indicated in the Table 10, 44

(37%) respondent spent between 26 and 50 Birr, 38 (31%) 16-25 Birr, 24 (20%) 51-75 Birr, 12 (10%) more than 75 Birr and 2 (2%) less than Birr 15. Generally, 80 (67%) respondents are spending average per month more than Birr 25 for the usage of their mobile phone.

Table 10 : Average per Month expense in Birr

Average per month expense in Birr	Frequency (N)	Percent (%)
Less than 15 Birr	2	2
16-25 Birr	38	31
26-50 Birr	44	37
51-75 Birr	24	20
More than 75 Birr	12	10
Total	120	100

Source: Survey data, 2014.

In addition, the respondents were asked for their opinion about their monthly expense. The finding of the study indicated (in the Table 11), among the respondents 93 (77%) said the benefit surpasses the cost, 21 (18%) it is reasonable, and 6 (5%) relatively expensive. The finding revealed that 114 (95%) respondents agreed on the current tariff.

Interestingly, the finding of the study from qualitative in-depth interview also revealed that the benefit surpasses the cost. However, only one among them commented that the costs for the usage of mobile phone may not be affordable for those farmers whose yearly earning income is low if they can't use it properly which results a burden.

As the finding of the study shows positive impact of having mobile phone, it does not support the previous study made by Hosea et al. (2008) who found that the running costs of mobile phones is a burden to the users which consumes more than 30% of their monthly income.

Table 11: Opinion on the cost of having mobile phone

Opinion about mobile phone charges	Frequency (N)	Percent (%)
Relatively expensive	6	5
It is reasonable	21	18
Benefit surpasses the cost	93	77
Total	120	100

Source: Survey data, 2014.

3.4. Mobile Phone Vs Livelihood and Rural Development

3.4.1. Contribution of mobile phone for the improvement of livelihood

In the rural area of the developing countries, the people are using mobile phone for their day to day activities. The same is true here in the study area. The finding of the study revealed that the respondents have started using the mobile phone for different purposes such as basic service majorly for voice calls. To know whether the respondents have perceived the positive contribution of using mobile phone for improvement of their livelihood and rural development or not, the respondents were asked about the impact of having mobile phone in their livelihood. As indicated here under the Table 12, of the respondent 65 (54%) affirmed the response saying 'yes', 41 (34%) said to some extent and 14 (12%) said having mobile doesn't improved their livelihood. The finding shows that almost 106 (88%) have said that having mobile phone have improved or improved to some extent their livelihood.

The same was resulted from the in-depth interview made with head of the Wereda Government officials. All responded that, surely, the mobile phones have improved the livelihoods of the rural communities.

Similarly, the finding of the study supports the previous studies of Hassen and Semkwiji (2011) and Masuki et al. (2010), the former found that farmers report about using mobile phones that have a positive influence on their livelihoods, and the finding of the later also revealed that the rural communities acknowledge that using mobile phones enables them for the positive enhancement of their livelihood and developments.

Generally, the finding indicates that mobile phone has positive contribution for improvement of the livelihoods of the rural community. They used it for coordinating their day to day activities which helps to increase their productivity by reducing transaction costs, saving time and the likes.

Table 12: Impact of having mobile phone on rural livelihood

Mobile phone improved livelihood	Frequency (N)	Percent (%)
Yes	65	54
To some extent	41	34
Never at all	14	12
Total	120	100

Source: Survey data, 2014.

3.4.2. The Perceived benefits of having mobile phone

Regarding this issue, respondents were asked with providing multiple responses, on how they perceived the benefits or the positive contribution of having mobile phone. The finding of the study is indicated hereunder in the Table 13. From this we can deduct that 104 (87%) said it reduce different costs, for instance, transport and accommodation costs; 79 (66%) confirmed its benefits in getting relevant information about their career and 65 (54%) said it helps them to know the market.

The finding from the in-depth interviews also supports the quantitative result. All participants responded that having and using the mobile phone by the rural communities

have benefited in improving their livelihoods for instance, to build and strengthen their social relation by avoiding physical travel which saves time and cost. In additions, it helps them for coordinating and facilitating the agricultural activities like getting the inputs, advice and support from ADA which enables them to increase their agricultural productivity or income. They have also benefitted by getting support at the time of emergency like calling Police, Ambulance and Government Officials.

The finding of the study is in agreement with the previous studies of Hassen and Semkwiji (2011), Masuki et al. (2010), Rahman (2010), and Sife et al. (2010).

Hassen and Semkwiji, (2011) revealed that mobile phone technology enables the rural communities enhance their livelihoods; Masuki et al. (2010) reported that using the mobile phone by the rural communities improves in food security, household assets and increased welfare spending; Rahman (2010) found that in the rural area the income of mobile users raise significantly because of getting better prices of commodities, reducing communication cost and health service cost, increasing productivity; similarly, Sife et al.(2010) also disclosed that mobile phones contribute to improve rural livelihoods and reduce poverty by providing rural households with fast and easy modes of communication, thereby increasing their ability to access livelihood assets, undertake diverse livelihoods strategies, and overcome their vulnerabilities.

Generally, the finding of the study implies that using mobile phones enable the rural communities in the study area to enhance their livelihood by increasing their productivities and income, reducing costs of like physical travel and minimizing their vulnerability due to different risks.

Table 13: Perceived benefits of having Mobile Phone

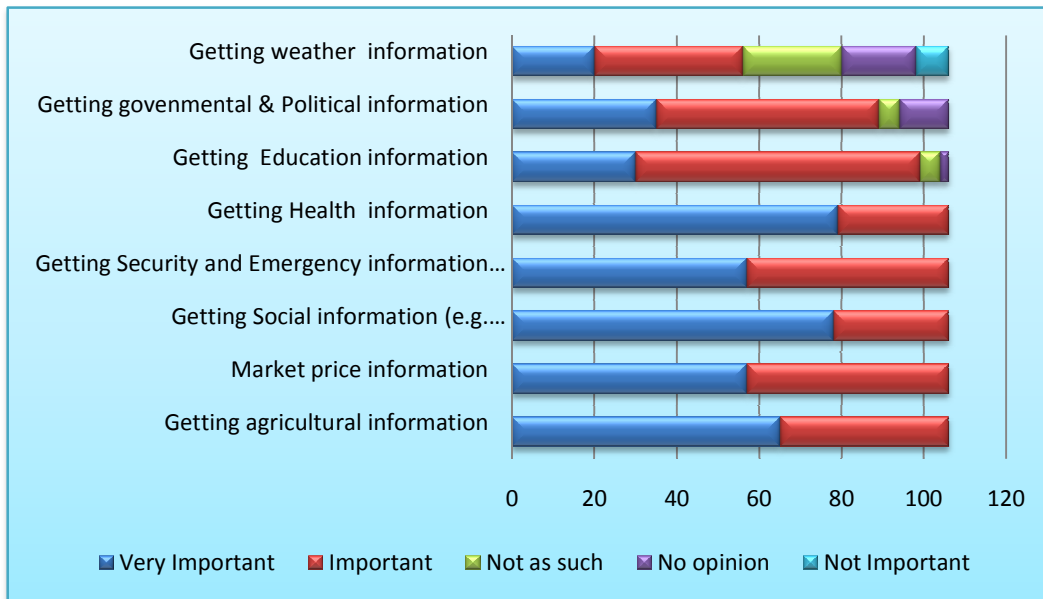
How mobile phone benefits	Frequency (N)	Percent (%)
By reducing different costs; e.g. transport, accommodation...	104	87
By helping to know about the market/ to get better price	65	54
By getting relevant information about your career	79	66

Source: Survey data, 2014. Multiple responses were permitted.

3.5. The Major Contribution Areas of Mobile Phone

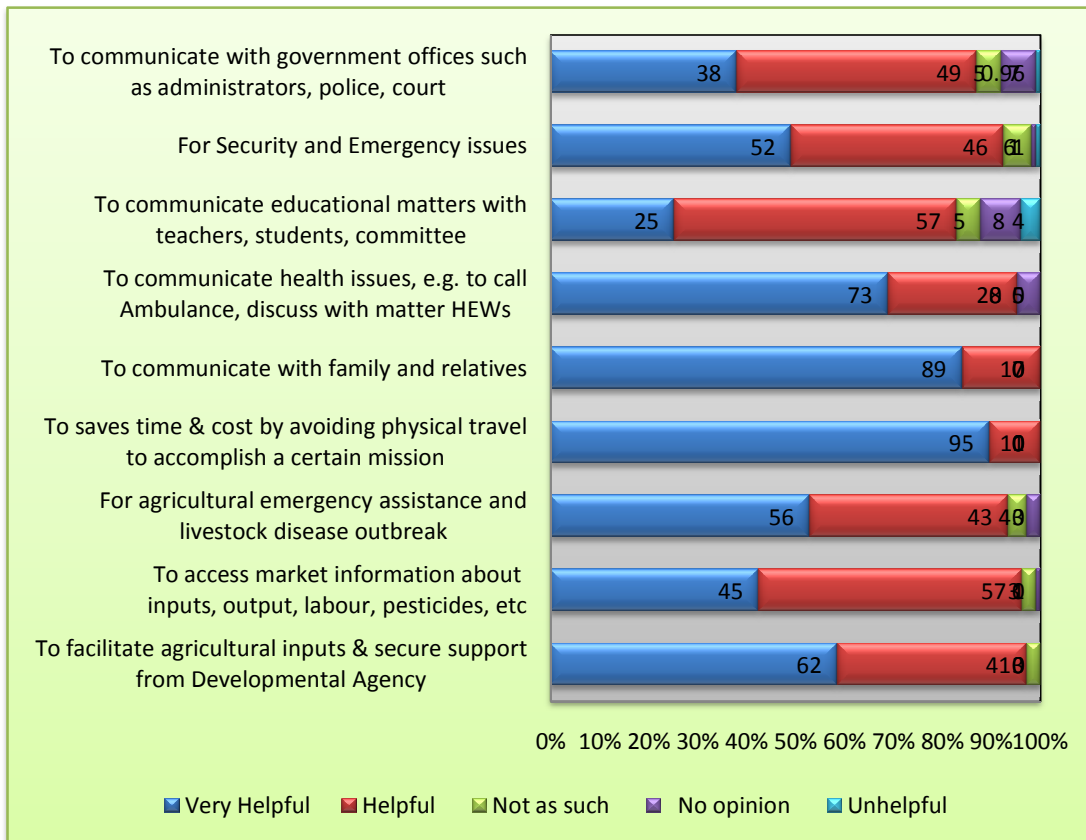
In the study, respondents indicated to what extent their livelihood is improved by having mobile phone. More importantly, the study found the major contribution areas of having mobile phone in the target area. To identify the major Contribution areas, by using a five point Likert scale the respondents were asked to rate the relative importance of information accessed via mobile phones. For rating, a five point Likert scale such as 1=unimportant or unhelpful, 2 = no opinion, 3 = not as such, 4 = important or helpful, 5= very important or very helpful was applied.

Figure 3.1-1: Relative Importance of Information Accessed



Source: Survey data, 2014.

Figure 3.1-2: Importance of Mobile phone



Source: Survey data, 2014.

3.5.1. Mobile phone and agriculture

Agriculture is the mainstay of the population in the target area since all the rural peoples in this target area are employed on the livelihoods of farming and livestock. As a result, respondent's mobile phones utilization with respect to agricultural activities was included in the study. In the research respondents revealed the importance of mobile phone for accessing the needed agricultural information.

The importance of having and using mobile phones for accessing agricultural and related information, like to facilitate agricultural inputs, market, technical support etc were accessed. In doing so, the respondents rated the importance of using mobile phone for accessing agricultural and related information which are important for the improvements of their livelihoods in particular and rural development in general. The finding of the study indicated hereunder in the Table 14 shows that the importance of getting agricultural information through mobile was rated by 106 (88%) of respondents as very important and important. Accordingly, the finding implied that most of the respondents are using mobile phone to access agricultural information.

The finding from the qualitative in-depth interview made with key informants revealed that farmers are using mobile phone access information for their farming activities. Moreover, the finding from the interview made with Wereda Chief Administrator and Head of Wereda Agricultural office disclosed that farmers are using mobile phone for accessing information about selected seeds, fertilizer, pesticides, etc. Furthermore, the Head of the Agricultural offices added that farmers are using it for accessing to get advice from ADAs and share their best practices which enable them to increase their productivity.

The finding of this study matches with the previous studies of Furuholt and Matotay (2011), Masuki et al. (2010), Mehta (2013), and Nyamba and Mlozi (2012). The study of Masuki et al. (2010) and Mehta (2013) reported that mobile phone enables farmers to inquire information, early in the season, about time of planting, source and availability of seeds and other inputs, and during mid season, to inquire about availability of pesticides for pest and crop disease management; the study of Furuholt and Matotay (2011) revealed that the improvement for access to cell phone based communication and information results in great changes across the entire cyclic farming life and value chain and hence help farmers in controlling their situation; the study of Nyamba and Mlozi (2012) also reported that the mobile phone provides an advantage for the rural people in accessing information related to their farming activities which can be useful to easy and improve their life standards.

To sum up, the finding reveals that mobile phone helps the rural communities for accessing information which enables them to be more productive and ripe their effort properly by getting price information about their produce. Moreover, it avoided the role of middle men who unreasonably harvest their effort only because of having information monopoly about the market. Also having mobile phone avoided travel and associated costs.

Table 14: Rating for Agricultural information

Information Type	Respondents (N)	Very Important	Important	Not as such	No opinion	Not Important
Getting agricultural information	106	65	41	0	0	0

Source: Survey data, 2014.

More importantly, using mobile phone to facilitate agricultural inputs and secure support from Agricultural Developmental Agents (ADA) and for agricultural emergency assistance and livestock outbreak activities which are needed for improving the livelihood were rated by 103 (86%) and 99 (83%) of the respondents, who said such information accessed via mobile phone is important, as very helpful and helpful respectively (indicated on the Table 15).

The result from the qualitative in-depth interview made with the head of Agriculture Office revealed that the mobile phone, for the farmers in the study area, have been helpful to coordinate agricultural activities like collecting selected seeds and fertilizer and needed labour for farming activities, for securing support from the agricultural extension workers and from other people within their social network for borrowing farm implements and requesting support for collective social forces which helps them facilitate agricultural activities.

The finding of the study confirms the previous studies of Furuholt and Matotay (2011), Masuki et al. (2010), and Sife et al. (2010). The study by Masuki et al. (2010) reported that mobile phone provides remarkable help for the rural people during the time of outbreak of foot and mouth disease to vaccinate all animals in village of the study area; the study by Sife et al. (2010) revealed that, use of mobile phones allows rural households to engage in many activities, something that can be translated into improved income earning and cost savings; the assessment of Furuholt and Matotay (2011) concluded in their findings that mobile phones give farmers the possibility of coordinating activities, gaining knowledge to control situations and increase their bargaining power and hence lowering all associated costs.

Generally, the finding from the study indicates that the rural communities have benefited in using mobile phone to facilitate and coordinate the agricultural activities which in turn increased their efficiency and effectiveness.

Table 15: Helpfulness of Mobile Phone for agricultural activities

Activities	Respondents (N)	Very Helpful	Helpful	Not as such	No opinion	Unhelpful
To facilitate agricultural inputs & secure support from Developmental Agency	106	62	41	3	0	0
For agricultural emergency assistance and livestock disease outbreak	106	56	43	4	3	0

. Source: Survey data, 2014.

3.5.2. Mobile phone and market price information

The study tried to address the importance of market price information accessed via mobile phone. Accordingly, the finding as shown in the Table 16 that the importance of market price information obtained via mobile phone was rated by 106 (88%) of the respondent as important and very important for improving the livelihood and rural development.

The result of the study from the in-depth interview made with key informants from the governmental offices also disclosed the same result saying market price information accessed via mobile phone helped the farmers to make informed decision before they put their products to the Market. Besides, it improved the bargaining power of farmers in the market.

The finding of the study supports the previous studies of Masuki et al.(2010), Rahman (2010) and Sife et al. (2010) found independently similar results that Mobile

phones provide great help for the farmers easy access to price information of different commodities including the agricultural inputs, to increase their bargaining power which make them free from middle-men influence, enables them in making decisions on the best time to sell crops, animals, and also to buy the agricultural inputs like seeds and fertilizer.

From the study, we can conclude that accessing information by using mobile phone is important and enables rural farmers to access better markets and prices for their agricultural inputs and outputs.

Table 16: Importance of Market information obtained via Mobile Phone

Information Type	Respondents (N)	Very Important	Important	Not as such	No opinion	Not Important
Getting market information	106	57	49	0	0	0

Source: Survey data, 2014.

On top of that, respondents were asked for rating the helpfulness of having mobile phone for accessing the market price information and for doing related activities in improving their livelihood. Of the 106 respondents who said market information accessed via mobile phone is important, 85% of them said it is very helpful and helpful and only 3 % were doubtful.

Similarly, the finding from the qualitative in-depth interview revealed the same result saying having mobile phone helped farmers to know about the market and price of their output and input which increased their benefit from their effort which was irrationally taken by middle men who have information about the market.

This result match with the previous studies of Masuki et al.(2010), and Furuholt and Matotay (2011) who found that mobile phone enable farmers in increasing the amount of opportunities available with the possibility to better access the market and price information of inputs and outputs, better negotiate with agents and middlemen which balanced their information asymmetric relationship.

Table 17: Importance of Mobile Phone for Market Information

Activity	Respondents (N)	Very Helpful	Helpful	Not as such	No opinion	Unhelpful
To access market information about inputs, output, labour, pesticides, etc	106	45	57	3	1	0

Source: Survey data, 2014.

3.5.3. Mobile phone and social relations

The importance of using mobile phone for getting social relation information about family, friends, relatives and social events were rated by 88% of the respondents as very important and important (Table 18). The finding from the qualitative in-depth interview with Key informants also showed that using mobile phone for such relationship helps the rural community to save its resources by avoiding physical travels which wastes their productive time, incur different costs like transport and accommodation fees.

Thus, by avoiding physical travel and actual costs, the rural community improves its livelihood using the modern communication medium, mobile phone. Also such easy communication gives psychological satisfaction which is in turn believed to increase productivity.

The result of study supports the studies of Furuholt and Matotay (2011), Mehta (2013), Sife et al. (2010) and Souter et al. (2005) who found that accessing information about family decreases the feeling of isolation and improve social relationships which leads for better doing of farming activities properly.

Table 18: Mobile phone's relative importance to secure social information

Information Type	Respondents (N)	Very Important	Important	Not as such	No opinion	Not Important
Getting Social information (e.g. family, friends and social events)	106	78	28	0	0	0

Source: Survey data, 2014.

3.5.4. Mobile phone and health

It is known that the health service is one of the important services for the rural societies which enable them healthy and productive. The Government of Federal Republic of Ethiopia (GoFRE) has made several health service infrastructures in the rural area like Rural Hospitals, Health Centres, Clinics and Health Posts in each Kebele with trained manpower. Similarly, in the study area of the rural Hallaba Special Wereda, there are nurses in the Health Centres, and Health Extension Workers in each Kebele, the Health focal Person in each Village and Ambulance in each health centre. Thus, there must be some sort of communication means to use all these resources when someone faces health problem, needs health information, faces accident, encounters emergencies like pregnancy women delivery, and so on. Among alternative means of communication mobile phone is the one for accessing health related information. So respondents were asked the relative importance of health information for improving their livelihoods.

Accordingly, 106 (88%) of respondents rated that health information obtained via mobile phone as very important and important for improving livelihood.

Table 19: Relevance of Health information accessed via Mobile Phones

Information Type	Respondents (N)	Very Important	Important	Not as such	No opinion	Not Important
Getting Health information	106	79	27	0	0	0

Source: Survey data, 2014.

Respondents, who said health information accessed via mobile phone is important, were also asked for rating the helpfulness of mobile phone to communicate health issues, 101 (84%) of them said mobile phone is very helpful and helpful for accessing health issues which are important for improving livelihood.

Table 20: Importance of Mobile Phone for communicating Health Issues

Activity	Respondents (N)	Very Helpful	Helpful	Not as such	No opinion	Unhelpful
To communicate health issues, e.g. to call Ambulance, discuss the matter with health extension workers	106	73	28	0	5	0

Source: Survey data, 2014.

The finding from the qualitative in-depth interview with Head of the Wereda Health office also assured that the health information accessed via mobile phone is helping the rural community significantly. The respondent said they transmit health related information through mobile phone to health professionals, health extension

workers, health focal persons and elder of each community about the outbreak of endemic and epidemic diseases and the case each of them should take. Also farmers use their mobile to get support at the time of emergency, to call Ambulance and Health Extension Workers (HEW). He also disclosed that Mobile Phone enabled the rural communities to save time and cost by avoiding physical travel to each and every problem they face. In addition he said, though few, farmers are starting to call “Hello Doctor” health service in Ethiopia recently.

This finding coincides with the study of Rahman (2010) who found that access to mobile phone eases health service to the rural people at the cost of call charge. The finding also cope with the study of Mehta (2013) who revealed that mobile phone enables the rural people in Bihar to access call to ambulance and to get support at the time of emergency. He also reported that thanks to Hello Doctor follow up via Mobile Phone from regional medical centre at Patna in Bihar, the rural population enabled to save money with reducing the cost and time spend on travel and medical fee.

3.5.5. Mobile phone and emergency

The sampled respondents were asked for their awareness about the importance of getting the emergency and security information obtained through mobile phones, for example natural calamities, fire, fighting between individuals and tribal group, accidents etc, 106 (88%) of them rated it as very important and important in this regard which are important to keep them from vulnerability in various situations.

Table 21: Importance of Emergencies and Security information accessed via Mobile Phones

Information Type	Respondents (N)	Very Important	Important	Not as such	No opinion	Not Important
Getting Emergencies and Security assistance (natural and manmade)	106	57	49	0	0	0

Source: Survey data, 2014.

The respondents also questioned for their real life experience (those respondents who said security and emergency information accessed via mobile phone is important) about to what degree their mobile phone helped them to manage and control security, emergencies and accidents, 98 (82%) of them said that it helped so much which enabled them to avoid their vulnerabilities due to different risks.

Table 22: The importance of Mobile Phone for security and emergency issues

Activity	Respondents (N)	Very Helpful	Helpful	Not as such	No opinion	Unhelpful
To communicating for Security and Emergency issues	106	52	46	6	1	1

Source: Survey data, 2014.

The finding from qualitative in-depth interview made with the Key Informants also confirmed the above result to some extent suggesting further improvement in the future.

The finding of the study confirms the earlier studies of Furuholt and Matotay (2011), Mehta (2013), Sife et al. (2010), and Souter et al. (2005) who cited mobile phones as very important devices that enable rural communities to communicate with the

concerned body or each other to get support at the time of emergencies in different situations.

3.5.6. Mobile phone and education

To test farmers' awareness about importance of educational information obtained via mobile phone which is important and have an impact on improving the rural livelihoods and development, only 99 (83%) of the respondents said it very important and important. The remaining 7 (10%) of them undermined the role of formal and informal educational information facilitated through mobile phone.

Table 23: The importance of Education Information accessed via Mobile Phone

Information Type	Respondents (N)	Very Important	Important	Not as such	No opinion	Not Important
Getting Education information	106	30	69	5	2	0

Source: Survey data, 2014.

They also asked for their real experience (those respondents who said accessing educational information by mobile phone is important), 82 (68%) of the respondents found it helpful. The rest undermined its helpfulness.

Table 24: The importance of Mobile Phone for Educational Activities

Activity	Respondents (N)	Very Helpful	Helpful	Not as such	No opinion	Unhelpful
To communicate educational matters with teachers, students, committee	99	25	57	5	8	4

Source: Survey data, 2014.

The finding from the qualitative in-depth interview made with the Wereda Chief Administrator and Head of Education Office shows that educational information like building schools by community participation, discussing about schools performance and educational quality, and evaluation of students and teachers performance, and so on are discussed with mobile phone in addition to physical visits and meeting. They said having mobile infrastructure in rural areas facilitated transmission of information replacing physical movements of concerned people to exchange information and conduct meetings, which in turn significantly reduced governmental and community expenses.

The result of these study supports the early studies of Mehta (2013) and Rahman (2010) who made known that mobile phone enabled the rural communities in getting educational information and transforms the education landscape by providing timely information as well as helping them cut down travel expense.

3.5.7. Mobile phone and e - government

These days, the rural people who using mobile phone are communicating with governmental bodies (the Legislatives, the Judiciary and the Executive) to discuss their personal and public issues without the need to move from place to place. Having this general conception, the researcher tried to know the target population understands such benefits of mobile phones or not.

Of the total respondents, 89 (74%) of them confirmed the importance of accessing governmental and political information via mobile phone which is important for improving good governance and livelihood. The result shows that it needs further understanding of users in the target area.

Table 25: The importance of Governmental and Political Information accessed

Information Type	Respondents (N)	Very Important	Important	Not as such	No opinion	Not Important
Getting governmental and political	106	35	54	5	12	0

Source: Survey data, 2014.

Moreover, those respondents who said mobile is important to communicate with government bodies were asked to rate how far they got it helpful. Of them 89 respondents (who said accessing governmental information is important), 38 (32%) said it very helpful, 49 (41%) helpful, 5 (4%) not as such helpful.

Table 26: The importance of Mobile Phone to Communicate Governmental Offices

Activity	Respondents (N)	Very Helpful	Helpful	Not as such	No opinion	Unhelpful
To communicate with government offices such as administrators, police, court	89	38	49	5	7	1

Source: Survey data, 2014.

The result from the qualitative in-depth interview made with key informants indicated that accessing governmental and political information via mobile phones is important for the rural communities in reducing different costs and also in developing their confidence and empowerment. They also disclosed that mobile phone had helped the rural communities to communicate with government offices with no need of traveling which saves time and money of the farmers. For instance, they communicated with the police to get support at the time of violence, the justice system to get information about court appointment, etc.

The Democratic Governance group, UNDP (2012b) in Mobile Technologies and Empowerment reported that mobile phone enables the rural people in Kenya to use the m- justice which has been opened by virtual court to improve access to and the provision of Justice.

3.5.8. Mobile phone Vs cost and time

The finding presented in Table 27 shows that among all respondents who were asked to rate the importance of having mobile phone for performing activities which are important for improving their livelihood, 106 (88%) of the respondents rated it as very help full and helpful of having mobile phone to saves time and cost by avoiding physical travel to accomplish certain activities.

Table 27: The importance of Mobile Phone in Saving Time and Money

Activity	Respondents (N)	Very Helpful	Helpful	Not as such	No opinion	Unhelpful
To saves time & cost by avoiding physical travel to accomplish a certain mission	106	95	11	0	0	0

Source: Survey data, 2014.

This is also confirmed by the qualitative in-depth interview made with the key informants.

The finding of the study agrees with studies of Rahman (2010) and Sife et al. (2010) who found that mobile phone benefited the rural communities saving travel costs and time.

3.6. The Adverse Effects of Mobile Phone

To assess the adverse effects of mobile phone service if any on performing their day to day activities and accessing the information which are important for improving their rural livelihoods and development, the respondents were asked about the role of having and using mobile phone for improving their livelihood. The finding indicated in the Table 14, revealed that only 14 (12%) respondents said that having and using mobile phone has nothing with improvements of livelihood and economic growth. Of these 14, 6 of them said cost of having a mobile service surpasses the benefit and the rest 8 said it wastes time which can be used for productive activities. Thus, it is possible to say great majority of respondents (88%) found it important to deliver social, economic and political responsibilities.

With in-depth interview, the key informants were also asked to explore about the adverse effects of the mobile phone on the rural communities. The finding shows that the rural communities are not affected by having mobile phones, rather they have been benefiting out it in various ways unless they use it unnecessary and for wrong purposes.

The finding of this study agree with the study of De Silva and Zainudeen (2007) who reported that mobile phones, used in the right way and for the right purpose, can have a significant outcome in addressing specific social and economic developmental goals as well as play a key role in a broader national development strategies.

3.7. The Challenges in the Usage of Mobile Phone

In the study, the target respondents in the area were asked an open ended question to explore their opinion, if any, regarding challenges in using mobile phone. In this study, among all target samples, only 93 respondents expressed their view. The

response given by the respondents were categorized in to 5 as shown in the following Table 28. As indicated here below in the Table, the finding with multiple challenge possibly revealed that among the respondents, 65 of them said that sometimes there is mobile network problem such as congestion, call drop, and disconnection. 63 of them said there is lack of knowledge and skills to operate different mobile phone applications, 60 of them mentioned there is language barriers in using short message services, 54 and 36 respondents mentioned poor battery quality and lack of electricity as challenge respectively.

Table 28: Challenges in using Mobile Phone

Challenges in using Mobile Phone	Frequency (N)
Mobile network problems(congestion, call drop and disconnection)	65
Lack of knowledge and skill for operating mobile phone applications	63
Language barriers for using SMS & Internet	60
Poor quality battery	54
Lack of availability of Electricity power at house hold level for recharging the battery	36

Source: Survey data, 2014.

The interviewed key informants (Government Wereda Officials) also confirmed the same such as the network problem, language barrier or lack of local content and poor electrifications.

The finding of the study supports the previous studies of Masuki et al. (2010) reported that in the rural area of South West Uganda, farmers face challenges in using mobile phone due to illiteracy, language barrier, poor mobile network signal and mobile battery charging problem.

CHAPTER FOUR

SUMMARY, CONCLUSION AND RECOMMENDATION

4.1. Summary

The aim of the study was to explore whether the expansion of mobile phone in the rural area of Hallaba Special Wereda contributed for improving the livelihood and development of the society or not. The study aimed either to prove or disprove the two opinions. On the one hand, the opinion which say having mobile phones in the rural community contributes for the improvement of their livelihood and rural development by facilitating access to information and reduction of various costs. On the other hand, others opinion say mobile phone for the poor society in the rural areas contributes nothing or insignificantly rather than wasting time and let them incur additional costs of the service due to the high degree of illiteracy and absence of readily available information that contributes positively.

The study attempted to answer the following questions:-

- What are the major reasons for having mobile phone?
- For what purpose the target population actually uses the mobile phone?
- Do target populations think mobile phones have positive contribution to the improvement and development of their livelihood?
- If so, what are the major contribution areas of having mobile phone?
- If no contribution or having reverse effect, what are the major reasons?

In order to deal with these basic questions, research was carried out by using descriptive study design. The total sample sizes of 120 farmers who owned and use mobile phone in the target area were selected. Among them, 96 were men and 24 were female. Due to lack of documented data about the mobile phone users in the study area, purposive sampling technique was used to select the samples.

Questionnaire and in-depth interview were used to collect the data. The data collected from the study were treated by simple statistical methods such as frequencies, percentages and also the Likert scale type used, then displayed as tables and bar charts.

Majority of the respondents were under the age group of relatively young and adult. Among them almost 72% have attended different levels of education from primary to college.

The majority of the respondents owned mobile phone to use its basic services like voice call. Some of them 47 % and 20 % use it for SMS and Internet browsing respectively.

The majority of the respondents have used mobile phone calls for different purposes such as calling Family, Friends and Relatives; to facilitate Agricultural activities; to get information about the Market, Health, Education, Religious activities, Security issues and other Governmental and Political activities. With respect to call priorities, 66 (55 %) of them use their phone to call for social reasons and the rest 53 (44 %) of them make call for different activities which contribute positively for the improvement of the livelihood of respondent in particular and the rural development in general. Also 48% of the respondents use other services of the cell phone like radio, music, and camera and so on. Especially from the radio, they get current information and music which entertain

them. However, 44 % of them said they listens radio interrupting their jobs which may in turn affects their productivity adversely.

Even though 67 % of the 120 respondents spend more than birr 25 per month on average, they said the charge per minute is reasonable and the benefit surpasses the cost. As a result of the positive contribution of mobile phone, majority of respondents (86%) said that their life standard and style changed a lot by reducing different costs, helping to access better market prices and getting the relevant information for improving their career. On the other hand, few respondents 14 (12%) deny the role of mobile phone for the improvement of the livelihood and development of the rural community saying the cost surpasses the benefits and it wastes productive time of the farmers.

Supporters of the first view, say that mobile phone is very helpful for rural communities to facilitate agricultural market information about inputs, outputs, labor, pesticides, etc.; secure support from Agricultural Extension Agents; to share information with different governmental offices; to communicate with family and relatives for social relation and events; to communicate health issues e.g. to call Ambulance & discuss the matter with health extension workers; to communicate for security and emergency issues; and to communicate educational matters with teachers, students, Educational Administration Committee. All respondents in the study area have perceived the benefits of saving cost and time by avoiding the physical travel to accomplish certain activities

On the other hand, the finding also revealed that respondents are facing challenges in using their mobile phone such as unable to call properly due to mobile network problem, unable to use SMS and the Internet browsing due to illiteracy and language barrier, and unable to get reliable battery charge due to poor quality of mobile battery and lack of electric power at household level in the area.

4.2. Conclusion

It is clear fact that, these days, mobile phone technology is expanding tremendously all over the globe, especially in the developing and middle income countries. In association with this, there are two major views among scholars and the general public about the role of mobile phone for the improvement of the livelihood of the rural population which is both cause and effect for the rural development. Numerous scholars say that mobile phone due to its easy and fast means of communication is widely recognized as a potentially transformative technology platform for developing countries. They claim, in the rural areas of these countries, the expansion of mobile phone network infrastructure provides a unique and unparalleled opportunity which in turn bounces the rural communities, especially farmers, access to information that could transform their livelihoods.

Conversely, there is a conflicting view about the prominence of mobile phone for the improvement of rural people's livelihood and development. This view, on the contrary to the first thought, assumes that mobile phone rather increases cost burden on farmers as they are mostly using it for non-productive activities such as social relation and wastes their industrious time while they make calls, listen radio, play games, take pictures, etcetera. Moreover, it claims that there is no or little readily available information source which farmers can access easily. This view is also seems not exceptional even here in Ethiopia.

As a result, this study was initiated to explore whether the expansion of mobile phone in rural part of the study area contributed positively for the improvement of the rural livelihood and development of the community or not.

However, the finding of the study revealed that mobile phone in the study area has positive contribution for improvement of the livelihoods and development of rural community and the community are using it to coordinate their day to day activities which help them enhance their livelihood by increasing their productivities and income, reduce transaction costs, save time and costs by avoiding physical travel and minimizing their vulnerability to natural and manmade dangers. Furthermore, the study specifically confirmed that mobile phone is helping the rural community to avoid social isolation; make on time and informed decision by accessing agricultural and better market price information; and communicate information related with health, security, education and other social issues which in turn increase their productivity and income directly or indirectly.

Besides, the survey result revealed the challenges in using mobile phone such as network problem, high rate of illiteracy, language barrier, poor quality of mobile battery, and lack of electric power at household level which consequentially affect mobile phone's role adversely.

Generally, though there are challenges, the study substantiates that using mobile phone by the rural community, especially farmers of the target area, has positive contribution in the improvement of their livelihood and development in diverse perspectives

4.3. Recommendations

As per the investigation conducted, the researcher recommends the following

- In the study area, due to lack of awareness and knowledge on the one side and the existing high rate of illiteracy and the language barrier on the other side have been the main challenges for the rural communities that hindered them not to fully benefit

from mobile phone basic services, especially, SMS and the Internet. Therefore, to overcome the challenge and enable the rural communities use the resource to improve their livelihood and bring rural development, the following actions should be taken:

- Have adult education program in the rural area
- Local contents should be developed by the Operator (Ethio Telecom), the concerned ministry (Ministry of Information and Communications Technology), and Mobile Phone Manufacturers or content developers
- Train the rural people how to use its mobile devices properly and economically by Agricultural Extension Workers and other relevant offices
- As seen from the research, there is mobile network quality problem in the area, which is of course common all over the country. Thus, to benefit a lot from it, the operator should improve the service quality in addition to expanding the mobile network coverage.
- Lack of electricity is one of the major challenges the rural community face in relation to mobile phones in particular. So, the government should either expand the facility or introduce alternative power sources like solar power by itself or through local and international technologists providing appropriate and attractive incentives
- The rural communities in the study area have been using voice calls for different reasons and purposes, among these, the majority of respondents are making calls for social purpose than to use it for economic activities. Therefore, continuous and sustainable awareness program should be designed for the rural people about the proper utilization of mobile phone for economic activities on the cost effective way.

4.4. Future research direction

Due to limitations on the scope of the study, the findings and conclusion may not describe other rural areas of the country, Ethiopia. So, similar but more wide-ranging studies have to be done in the other parts of the country. Also, the association and the interdependency of different variables in the study have to be investigated.

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Appendices 1

Indira Gandhi National Open University

School of Management Studies Master Degree of Business Administration

Entry number

Kebele _____

Questionnaire for Farmers

The questionnaire is being used to find out role of mobile phone in improving the rural livelihood and development in the in Hallaba Special Wereda. Your responses will be used purely for academic purpose; hence confidentiality and anonymity are assured.

INSTRUCTIONS:

Please read the following questions carefully and put a tick [✓] or encircle appropriate answer(s) in the boxes provided.

I thank you in advance for your time and attention!

Respondent's Data

I. Name of respondent (optional): _____

II. Age

- a) 18 – 35
- b) 36 – 50
- c) Above 50

III. Gender

Male

Female

IV. Marital Status

- a) Single
- b) Married
- c) Divorced
- d) Widowed

V. Education

- a) No formal schooling
- b) Primary School and Junior Secondary
- c) Senior Secondary
- d) College/University

1. How long you have acquired a mobile phone?
 - a) Less than a year
 - b) 1 – 2 years
 - c) 2 – 5 years
 - d) Above 5 years

2. How much Birr, on average, do you spend on your mobile phone per month?
 - a) Less than 15
 - b) 16 – 25
 - c) 26 – 50
 - d) 51 – 75
 - e) More than 75

3. What is your opinion about the costs of using mobile phones?
 - a) It is expensive compared to its benefit or other means of having information
 - b) It is reasonable
 - c) The benefits surpass the cost

4. Do you have any difficulty to use mobile phones for the following major purposes?

Purpose	Yes	No
Voice call		
Internet		
SMS		

5. What is/are the major reason/s to own mobile phone?
 - a) To use its basic services (make voice calls, browse internet, or use it for SMS).
 - b) To use its other services like; radio/music, game, flash light, camera, calculator, etc.
 - c) To maintain status or just because others do it
 - d) Other, please specify _____

6. For what purpose/s do you make calls?
 - a) To call family, friends and relatives
 - b) To facilitate agricultural activities
 - c) To get information about the market
 - d) Health and education
 - e) Religious activities
 - f) Security reason
 - g) Other governmental and political activities
 - h) Other, please specify _____

7. How often have you been using your mobile phone to?

Reasons	Frequently	Rarely	Never	No Opinion
Communicating with family and relatives for social relation and events				
Consultation with Agriculture Development Agents				
Business activities like information of market prices for agricultural inputs and output products				
Health and Education				
Security/ e.g. to call police				
Other Government and political issue				
Weather conditions				
Just to chat with friends				
Religious purpose				
Camera				
Playing games				
Calculator				
Flash light				

8. Which one is your priority while using your phone?

- Using it for activities which maintain social relationship
- Using for activities which improve livelihood or economic status
- Showing social status

9. How regularly you are using your phone's other services like radio/music, game, camera, calculator, etc.?

- Never use them
- Less than an hour a day
- 2 – 4 hours a day
- More than 4 hours a day

10. If you are using, at what time?

- During working hours
- During leisure times
- Both during work and leisure hours

11. If you are listening radio/music via your mobile phone, you listen

- Sitting idle
- While working your job
- Interposing your job

12. Do you think that having a mobile phone improved your livelihood/ economic status?
- Yes
 - To some extent
 - Never at all
13. If “yes” or “to some extent” how?
- By reducing different costs; e.g. transport, accommodation...
 - By helping to know about the market/ to get better price
 - By getting relevant information about your career
 - Other, please specify _____
14. If having a mobile phone affected your life adversely, in what respect?
- Costs you more than the benefit you get out of it
 - Wastes your time
 - Other, please specify _____
15. How important are the following types of information you get using your mobile in improving your livelihood?

Information Type	Very Important	Important	Not as such	No opinion	Not Important
<i>Agricultural information</i>					
<i>Business and market price information</i>					
<i>Social information (e.g. family, friends and social events)</i>					
<i>Emergencies (natural and manmade)</i>					
<i>Government and political</i>					
<i>Health information</i>					
<i>Education information</i>					
<i>News and weather</i>					

16. Rate the importance of having mobile phones to the following activities

Activities	Very helpful	Helpful	Not as such	No opinion	Unhelpful
<i>To facilitate agricultural inputs & secure support from Developmental Agency</i>					
<i>Access market information about inputs, output, labour, pesticides, etc</i>					
<i>Agricultural emergency assistance and livestock disease outbreak</i>					
<i>Saves time & cost by avoiding physical travel to accomplish a certain mission</i>					
<i>Communicate with family and relatives for social relation and events</i>					
<i>Communicate health issues, e.g. to call Ambulance, discuss with health extension matter workers</i>					
<i>Communicate educational matters with teachers, students, committee</i>					
<i>Security and Emergency issues</i>					
<i>Communicate with government offices such as administrators, police, court</i>					

17. If any opinion regarding mobile usage

Appendices 2



Indira Gandhi National Open University

School of Management Studies Master Degree of Business Administration

In-depth interview with Head of 6 Different Government Officials

Under the Special Wereda of Hallaba

The questionnaire is being used to find out role of mobile phone in improving the rural livelihood and development in the in Hallaba Special Wereda. Your responses will be used purely for academic purpose; hence confidentiality and anonymity are assured.

1. Would you tell me your name, the name of your office and your position as well?
2. Do you and your office have contacts with farmers?
3. If yes, for what activities and how often you or your office make contact with farmers?
4. Do you use mobile phone to communicate with farmers?
5. If yes, for what purpose or activities and how often you make communication via using mobile phone?
6. What means you were using to communicate with farmers before the expansion of mobile phone in the rural area?
7. Do you think that using mobile phones improved communication with farmers?
8. If yes, how and in what way it improved?
9. If using mobile phone didn't improve communication with farmers, in what respect?
10. What is your opinion about the costs of using mobile phones with regard to its benefits for farmers?
11. Have you observed any difficulty in using the mobile phones by farmers for the purpose of Voice or SMS or Internet? If so, what type of difficulties?
12. From your observation or experience or knowledge, what are major reasons that motivate farmers to own the mobile phones?
13. From your observation or experience or knowledge, for what purposes farmers use to make call by their mobile phone? For which purpose they have frequently or rarely used in making calls?
14. Do you have experience that farmers are using other services of mobile phone like radio/music, game, clock, camera, recording and others?
15. Do you think that having and using mobile phones have improved the livelihood of farmers?
16. If yes, how and in what respect it improved their livelihood?
17. If having and using the mobile phones have adversely affected the livelihood of the farmers, in what respect?

18. If you have any additional response which is not included or mentioned in the interview with respect to the mobile phone services in relation to the livelihood and development of the rural area, please _____