

**FINANCING SMALLHOLDER FARMERS ENGAGED IN
SMALL-SCALE IRRIGATION: THE CASE OF OFFA WOREDA:
WOLAITA ZONE,**

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

Final Project Report



Submitted by:

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In partial fulfilment of the requirement for the

Degree of Master of Arts in

Sustainable Development Practice

Submitted to

Department of Policy Studies, TERI School of Advanced Studies

June 2018

DECLARATION

This is to certify that the work that forms the basis of this project:

“Financing Smallholder Farmers Engaged in Small-Scale Irrigation: The Case of Offa Woreda Wolaita Zone - Federal Democratic Republic of Ethiopia” is an original work carried out by me and has not been submitted anywhere else for the award of any degree. I certify that all sources of information and data are fully acknowledged in the project report.



Aynalem Tadesse Dada

Ethiopia;

June 2018

CERTIFICATE

This is to certify that *Aynalem Tadesse Dada* has carried out his major project in partial fulfilment of the requirement for the degree of Master of Arts in Sustainable Development Practice on the topic: '*Financing Smallholder Farmers Engaged in Small-Scale Irrigation: The Case of Offa Woreda Wolaita Zone, Federal Democratic Republic of Ethiopia*' during January 2018 to May 2018. The project was carried out at the '*Federal Ministry of Agriculture, Ethiopia.*'

The report embodies the original work of the candidate to the best of our knowledge.

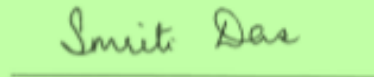
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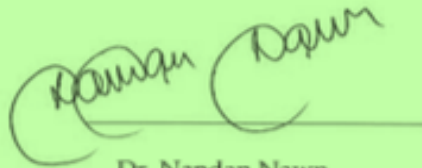
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Should there be errors, omissions, typos and other problems in the work, they solely rest on me.

Abstract

Agriculture, mainly the smallholder farming is the most dominant subsector in the Ethiopian economy. Its contribution to employment creation, total factor input, total output, and export earning is irreplaceably high in the present scenario. Yet, Ethiopian agricultural sector, as in many other developing countries, is characterized by a heavy dependence on natural rain. Its rainfall pattern is erratic and is increasingly unpredictable over time. Although the current government is committed to capitalize on agricultural development – mainly the smallholder chunk of the sector by allocating a significant amount of the national budget (15-20%) for agriculture, and as a result experiences a promising overall economic growth over years, it could not bring structural change on its economy. Rural infrastructures, availability farmer-friendly credit facility, crop insurance, etc. are lacking/very limited in many parts of the country. This study is conducted in Woshwocha Dekaya rural community in the SNNPR, Ethiopia to identify major challenges of smallholders engaged in small-scale irrigation, issues of sustainability, mapping the financial institutions and their financing mechanisms and investigate the potential roles of small-scale irrigation in impacting the livelihoods and food security of the farming families and the larger consumer community. For so doing, intensive household interviews, Key Informant Interviews, Focus Group Discussions, and relevant literatures are reviewed to build the conceptual framework. Financial constraints, shortage of water/irrigation facility, youth migration, land fragmentation and degradation, etc. are among the leading problems of smallholders engaged in irrigated agriculture and weakness of WUA committee, lack/unaffordability and less timeliness of agricultural inputs, lack of easy and lubricated marketing linkages, information asymmetry, crop insurance are the main post-facto problems. As revealed by the study, formal financial institutions in Ethiopia and the study areas are both ‘town based’ and ‘town biased’ respectively in their positioning and credit priority, and the rural informal sectors (e.g. RUSACCOs) are disabled and toothless, that it needs pragmatic intervention to capacitate them via training the leadership, financing, monitoring and evaluation.

Key Words

Agriculture, Credit Facility, Financial Institutions, Food Security, Micro Finance, Smallholder Farmers, Small-scale Irrigation.

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ACRONYMS

ACSDS	Agricultural Cooperatives Sector Development Strategy
AEMFI	Association of Ethiopian Micro Finance Institutions
ATA	Agricultural Transformation Agency
BoFED	Bureau of Finance and Economic Development
CAADP	Comprehensive African Agriculture Development Programme
FAO	Food and Agriculture Organization of the United Nations
FCA	Federal Cooperatives Agency
FGD	Focused Group Discussion
GDP	Gross Domestic Product
HH	Households
IFAD	International Fund for Agricultural Development
IFC	International Financial Cooperation
IPTRID	International Program for Technology and Research in Irrigation and Drainage
KII	Key Informant Interview
MFI	Micro Finance Institutions
MoA	Ministry of Agriculture
MoWE	Ministry of Water and Energy
NGO	Non-Governmental Organization
POS	Point of Sales Service
RUSACCO	Rural Saving and Credit Cooperatives
SNNPR	Southern Nations, Nationalities and Peoples Region
STDs	Sexually Transmitted Diseases
TDA	Terepheza Development Association
TERI – SAS	TERI School of Advanced Studies
UN – SDGs	United Nations Sustainable Development Goals
WPR	World Population Review
WUA	Water Users Association

CHAPTER 1

INTRODUCTION

1.1 Roles of Agriculture in Transitioning the Economy

The conventional debate over the roles of agricultural development to the contribution of the overall growth of countries has been ongoing and switching between prioritizing either agricultural development or industrialization. The sceptics against prioritizing agriculture goes back to the concept of dual economic model proposed by Arthur Lewis (1954), viewing economic development as a process of growth necessitating the reallocation of production factors from a backward, and low productive agriculture to the high producing industrial sector with an increasing rate of returns (Lewis 1954).

Lewis Model, commonly known as linear growth model, considers agriculture's contribution to be insignificant for the realization of development as it only provides labour and food to the industrializing wing. The sceptical basis to suspect the potency of agriculture is based on the account that the prolonged African poor performance of the agricultural sector, fragile and weak institutions and infrastructures for rural development – coupled with worsening agro-ecological realities of many countries in the continent. These people argue from the fact that Africa failed to bring about structural change in the importance of agriculture – larger size of agriculture and its huge contribution to the national GDPs of the continent is an indicative of its failure to develop. Past experience shows that there has to be a significant decline in the importance of the agricultural sector for the overall growth of countries (Diao, X., Hazell, P. & Thurlow, J. 2010).

Contrastingly, this view of diminished role of agriculture in boosting the overall economy of countries was refuted by the shining success stories of the Green Revolution of South-East Asian countries in the late 1960s and early 1970s – vividly demonstrating the efficacy of agriculture in initiating the wider economic development. This becomes more profound and noteworthy as far as the continent, Africa is concerned. Majority of its dwellers live in rural areas and make agriculture their main source of livelihood. For the transformation of subsistent traditional economy into the improved and thriving industrial one, it is worthy of capacitating

rural families' economies, that there might be sustainable demand for the industrial produces and dependable supply of the raw materials to the agro-processing centres – to keep the industrial machine working.

Agriculture, as a mainstay of the majority of population of the developing world plays a decisive role in their economies. The contribution of the sector is manifested in terms of food provision for the people, raw material inputs for industries, viz. cotton for textiles, cereals, fruits, vegetables, animal products for the food processing industries of the homelands or abroad. The sector also greatly contributes for the national GDPs and accounts for the larger chunk of foreign exchange. Of the world's 75% poor that make their living in the rural areas, more than 80% make agriculture their main source of income and employment generation (IFC 2014), and these smallholders have a tantamount role in increasing food supply in poor countries more significantly than the larger farm owners in those countries.

However, the performance of the sector to shoulder its responsibility of anchoring and sustaining the system, is challenged and lost its confidence in the last decades - let alone thriving and leapfrogging the structure. The trend of agrarian economy, particularly in the sub-Saharan Africa experiences a downward spiral as Africa as a whole failed to transform the sector in a pace competitive to the rest of the developing world. This reality left a '*legacy*' of mass-hunger and multidimensional poverty in the continent. Africa's agriculture is largely characterized by subsistence oriented – dominated by smallholders and pastoralists (Nyagah, L. 2011) - the same report confirms in the Sub-Saharan Africa, there are 33 million households that account for more than 80% of all farming families in Africa hold less than 2 hectares in average. Comprehensive African Agriculture Development Program (CAADP 2003) indicated Africa, with the majority of its people from smallholder background, failed to nourish itself and has been in an unforgiving condition for the past many decades. CAADP (2003) reveals that the number of chronically undernourished people in Africa has risen from 173 million in 1997-1992 to 200-million in 1997-1999. The Sub-Saharan share of these figure is counted to be 194-million - 34% of the continental population, - this is indeed alarming.

Below the Sub-Saharan Africa, there approximately are 229 million extremely poor rural people where agriculture is much more than simply to provide food security but it secures 1.3 billion jobs for the smallholders and landless farm workers thereby

employing 65% of the labour force in the region (Nyagah, L. 2011). The return of agricultural financing, particularly on smallholders is magnificent - perceivably more than 80% of the global decline in rural poverty from 1993 to 2002 was attributable to agricultural transformation (Nyagah, L. 2011). But this giant sector absorbing the majority of the labour force and serving as a mainstay of the people is deprived of priority in significant and programmed financing initiative that centre the poor/smallholder farmers in the public expenditures of African states.

Based on this shocking reality and misguided past, African heads of states met in Maputo, the Capital of Mozambique in 2003 to come up with vibrant and unprecedented continental decision that shouldered the mission of shifting the paradigm of public financing towards agricultural development. The document, commonly referred to as 'The Maputo Declaration' put a compulsory standard that necessitates member states at least to allocate 10% of their national budgets to the growth of the agricultural sectors by 2015. However, in a survey conducted 4 years after the commencement of the declaration, half of the member states till that allocated less than 5% of the national budget to the agricultural sector CAADP (2008). The same policy brief witnessed a few countries to achieve the standard ahead of time, Ethiopia with an achievement of 12% became one of a few pro- rural and agricultural development states.

World-wide, the application of water and its managed use has been an indispensable factor in raising agricultural productivity and ensuring output predictability. Water is essential to bring forth the potential of the land and to enable improved varieties of plants to make full use of other yield-enhancing production factors (fertilizers, pesticides, improved seeds). Yet the percentage of arable land that is irrigated, for example, is barely 3.7 percent in Sub-Saharan Africa, a figure that rises to 7 percent in Africa as a whole given that 40 percent of the total irrigated area is in North Africa CAADP (2003). These are the lowest percentages in the developing world: the corresponding percentages are 10, 29 and 41 for South America, East and South-East Asia and South Asia respectively. In Africa as a whole, in the absence of deliberate steps to accelerate progress, the extent of irrigated land is expected to grow at under 1 percent per year over the period from 1995/97 to 2030, at which time the extent of irrigated land would be barely 20 percent of potential in Sub-Saharan Africa, as depicted from CAADP (2003).

The world's population has grown with an alarming rate in the last two centuries than the rate of food production is expected to increase in a proportional manner with the growing population. Consequently, FAO (2000) of the United Nation estimated that food production from irrigated agriculture has to increase from 35% in 1996 to 45% in 2020 to feed the growing population – making the issue of water availability and access a global concern, particularly in the arid and semi-arid regions of the world (FAO, 2000 cited in Mengiste and Kidane 2016, p. 1).

1.2 Research Problem

Ethiopia, with its estimated total population of 107.5 million is the most populous landlocked country in the world and the second most populous country in the whole Africa, next to Nigeria, WPR (2018); available at www.worldpopulationreview.com. The country is agrarian where smallholder farmers predominate production - 85% of the total population lives in rural areas, 90% of which depend mainly on crop production for their livelihoods. The national poverty incidence in the country is 30%. There is a disparity in the pattern of poverty in urban and rural areas; the poverty incidence in the rural area is higher than that of the urban areas – the poverty incidences are respectively 33% and 29% in urban and rural areas (Tefera, E., & Chu, Y., 2017).

The Ethiopian agricultural sector is primordially dependent on natural rain which recently is becoming more erratic and unpredictable for seasons. The heavy dependence of the Ethiopian farming community on rain fed agriculture resulted in a very limited livelihoods opportunity, increasing farmers' vulnerability towards weather shocks and decreased resilience for every risk, related to their farming economy. Agricultural transformation and structural change in the country is entangled and stagnated by many a factors such as, lack of institutional credit facility for the farming community - less than 10% of the population in the country gets access to formal credit service (AEMFI 2010), lack of policy priority for irrigated agriculture (until recently), land fragmentation/small holding, etc.

However, Ethiopia is frequently cited as a water tower of Africa next to Democratic Republic of Congo by her richer surface and ground water resources. The country has many international river basins, natural lakes, high ground water potential; hence high potential of irrigated agriculture in the country. In spite of the fact that the country has such an immense resource bases and surface river networks, the country's irrigated land is only recently approaching 10% of the totally cultivated land area. The cultivated land itself is astonishing minimal that it only accounts for only 15% of the arable land in the country (MoWE 2012). The Ethiopian lowlands (<1500m.a.s.l.) occupies more than 80% of the land area of which 85% is suitable for agricultural activities, whereas only 40% of the highlands where more than 85% of the population settled are conducive for agriculture (Woldegiorgis, N. 2012). The Ethiopian lowlands are underserved and not equipped with infrastructures and basic amenities are missing that people climb mountains to rescue themselves from weather borne diseases (malaria, tsetse fly) and other protozoal diseases.

Concerning the trend of agricultural productivity in the country and the primary investigation from the responses of the sampled households for this study, there is an intermittent improvement in the productivity of smallholder agriculture mainly due to improvement in the access of chemical fertilizers and improved seeds. However, there is a huge potential to increase the productivity of agriculture and other allied activities in the rural economy in the country. Given the fact that only 15% of the country's arable land is under cultivation, introducing small scale irrigation and institutional financing facilities in the reach of farmers have a huge, untapped potential to ensure food security and livelihoods improvement. It is, thus, noteworthy for the government and other bilateral development organizations, for example IFAD to capitalize in boosting the agricultural productivity through introducing Participatory Small-scale Irrigation Programs and Rural Financial Remediation Initiatives. Hence, this study is motivated to investigate the contribution of small scale irrigation schemes and accessing rural financial facilities in ensuring households' food and livelihoods security, identify prominent challenges that impede practicalities of irrigation schemes, threats of financial institutions in penetrating and remediating the farming communities, and issues of Sustainability of irrigation projects.

1.3 Organization of the Thesis

The thesis is organized into five chapters. The first chapter, being introduction, set the context of agricultural financing, challenges of the smallholder farmers mainly taking Ethiopian case. The second chapter reviews the relevant literature and the conceptual framework of irrigation-food security nexus, irrigation potential and uptake in Ethiopia, roles of irrigated agriculture and the chapter takes a brief over view of the financial market in Ethiopia mainly capitalizing on MFIs. Chapter three elucidates the methodologies, objectives, data organization and research area description. The fourth chapter focuses on the findings of the research from field engagement and narrative discussions therein. The last chapter, chapter 5 is devoted to the concluding remarks and recommendations of the researcher based on the findings.

CHAPTER 2

BACKGROUND AND RATIONALE

2.1 Background

This section of the research presents review of the relevant literature and practical challenges associated with the empirical studies of financing smallholder farmers through financial institutions. It also tries to identify major problems and bottlenecks regarding irrigated agriculture in Ethiopia in terms of smallholder farmers.

Agriculture, being the main economic activity of low income countries supports over 80% of their population directly or indirectly IFC (2014). IFC narrates the challenges, hurdles and missing links that the smallholder farmers face in those low-income countries including no/limited access to formal credit, stagnant agricultural productivity, limited access and easy marketing of their produces, and lack of adequate risk management services. Agriculture, even though it supports in Africa about 55% of the population in employment creation, only 1% of the bank loan goes to agricultural sector. According to IFC, 4.7% of adults of the rural areas in developing countries have a loan from formal institutions and only 5.9% have a bank account IFC (2014).

In Ethiopia, as in many developing sub-Saharan African countries, agriculture (smallholder – rain-fed) plays a paramount role in the whole national economy by its irreplaceable contribution to the countrywide livelihoods, and export earnings. Though the smallholder farming is the most dominant engagement, it is these farmers who suffered the most from lack of capital, dependable credit service, technological innovations, improved agricultural inputs, continued decline in soil fertility and degradation, etc. Despite the country's recorded history of feeding itself, it became food importer and aid dependent (Getahun, H. 2001). The same author argues that the steady decline in the agricultural productivity and production, and hence the deterioration of the living standards of the farming community is attributed to wrongly configured national policy lines and the historic deprivation of the relevant priority to the sector by the former regimes; notably lack of capital resource directed to the

supply of adequate rural finance and credit services. This neglect of the smallholder farming sector resulted in the lack of institutional credit facility to the 70 – 80% of the Ethiopian farmers (Getahun, H. 2001).

Traditional irrigation practices as in many other agrarian economies is a common place practice in Ethiopia from time immemorial. Irrigation, in its much older practice is as simple as stream diversion, hand-dug shallow well, a practice of in - situ moisture conservation, etc. The introduction of modern irrigation practice in Ethiopia was documented during the 1960s when the then government designed mega irrigation projects in the Awash valley so as to produce food for inland consumption and cash crops for exports MoWE (2012). From the genesis of development planning in Ethiopia, it is evident that the smallholder agricultural development sector was deprived of priority in the desks and documents of the planning commissions.

The first five-years plan (1957-1961) sought to build infrastructures of transportation, constructions, and communication sectors to link the fragmented regions. While the second-five-years plan (1962-67) predominantly focused on product diversification, introduction of modern processing, mineral and electric power development – giving less focus for agricultural development by the assumption that the country is food self-sufficient to supply food for the growing population and raw material input for the cropping industrial sector. However, the reality went all the other way around that the country turned to be food importer and in seek of food aid in its history (Woldegebriel, N. 2012). This necessitates Ethiopia in the first place to prioritize the benefits of the smallholder farmers while designing policies and planning initiatives before going to the depth of the implementation stages. This inevitable fact obligated the third-five-year plan (1968-73) to mainly focus on the inclusion of the agricultural sector. Unlike its predecessors, the third-five-year plan was committed to the expansion of education and improve the peasant agriculture (smallholder farming). Just after the launching of the third-five-year plan, there took place several studies so as to estimate the irrigation potential of the country, mainly of the large international river basins. The following table indicates the potential of some major rivers with the capacity of irrigating 3.8 million hectares. The Wabi-Shebelle catchment is the largest among others having a total area of 202,220 ha. Followed by Abbay (198,891 ha.). The table as per the quantities indicate the irrigation potential of 28.3%, 26.8%, and 21.5% of respectively

Genale Dawa, Baro-Akobo, and Abbay. The total irrigated area in the country is almost **10%** of the overall irrigation potential – relatively better than the Sub-Saharan standard, but lower than China (52%), India (33%), and Kenya (22%) (Hussien et al., 2006, Mati, 2008, Norton et al., 2010 cited in Woldegebriel, N. 2012, p.10).

Table 1: Irrigation potential of the major international river basins in Ethiopia:

Rivers	Mean annual water flow (BM ³)	Mean annual water flow (BM ³)	Catchment area (KM ²)	Irrigation potential (ha.)	Irrigated Land as of 2010 (ha.)	Irrigation intensity (%)
Tekeze	7.6		83476	83368	33760	40.49
Abbay	52.6	7.6	198891	815581	65404	8.02
Barro-Akobo	23.6	52.6	76203	1019523	18571	1.82
OMO-Gibhe	17.9	23.6	79000	67928	56057	82.52
Rift Valley	0.12	17.9	52739	139300	35846	25.73
Afar Denakil	0.86	0.12	63853	158776	627	0.39
Mereb	0.26	0.86	54600	67560	910	1.35
Awash	4.6	0.26	110439	134121	120375	89.75
Wabi-Shebelle	4.6	4.6	202220	237905	31701	13.32
Genale Dawa	5.8	4.6	172133	1074720	4910	0.46
Total	117.08	5.8	1093554	3798782	368161	9.7

Source: MoWE (2012)

Irrigation schemes are classified it into different categories on the bases of technology use, magnitude of irrigated land, number of users (administration), and the structure of irrigation. In Ethiopia, Irrigation is categorized as small scaled, medium scaled and large scaled – using size of irrigated land, technology use and management (Hagoe et al. 2009, cited in Woldegebriel, N. 2012).

Table 2: Classification of Irrigation typologies in Ethiopia (Woldegiorgis, N. 2012)

Typologies	Farm Size (ha.)	Infrastructure	Water Management
Small-scale Irrigation	Less than 200	Fixed or improved water control, local materials, diversion structures	Local WUA or Coops.
Medium-scale Irrigation	200-3000	Fixed or improved water control	WUA or Coops. /state
Large-scale Irrigation	Above 3000	Fixed or improved water control	Mostly state enterprises

The importance of irrigation in boosting and sustaining agricultural productivity and food security is not debated. The enthusiasm of irrigated agriculture was over celebrated and hence many ambitious large-scaled irrigation projects came into being during the 1960s mainly in the time of the green revolution that undeniably changed the setting of the agricultural community, particularly the south Asian countries. However, the revolution of the large-scaled irrigation projects also resulted in an unprecedented environmental, social, economic, fiscal, administrative and managerial jeopardies in these areas. For instance, large-scaled irrigation projects increased the incidence of water borne, protozoal (malaria), and fungal diseases in the localities, resulted in erosion of hills, forest encroachment and flooding of the rich forests. The construction of the large-scaled irrigation projects is extremely costly in terms of construction and maintenance and are not smallholder-friendly in many aspects apart from taking substantial land area for construction works (reservoirs, subsidiary canals and structures).

It is today a common knowledge that large-scaled irrigation revolution shifted the culture of cultivation in many parts of the emerging economies around the world – it promoted the practice of monoculture agriculture in the veil of specialization in places where diversification is part and parcel of farmers, especially the smallholders. This indeed, resulted in a threat of the livelihoods of farming communities as the rise of diseases and pests can easily debilitate the monoculture cropping fields. There for, large-scaled irrigation schemes are pro large farms and rich farmers who can afford the initial and running costs.

Regarding the operation, management and performance of large-scaled irrigation programs in Africa, FAO (1987) summarized the following weaknesses:

- *“Creates big/Inflated governments, it sophisticates administration – inflating administrative costs; lack of technical skills; inconsistent policy and planning accord, no delegation and political decentralization, etc.”*

Small-scaled irrigation, on the other hand, is an enhancement/strengthening of the already existing practices. In Ethiopian highlands farmers traditionally practice micro irrigation schemes like stream diversion administered by gravity, constructed by stones, soil and wood. Introducing modern small-scaled irrigation is kind of upgrading the diversion structures by small concrete and masonry works to deliver the water in a more efficient manner. Small scaled irrigation is a farmer friendly and engagement where farmers get easily involved in its planning, implementation and post-facto management. These ensures farmers’ responsibility in sustaining the schemes after the construction works, much better than those planned and implemented by the absentee externals.

FAO (1987) noted the following advantages of the small-scale irrigation over the large scaled ones:

- *“Self-reliance of local people encouraged, – less abrupt change of technological, promotes self-initiated development process, not a once for all change, local people are mobilized for human and capital resource, hence participation increased, etc.”*

Given these all, the International Fund for Agricultural Development (IFAD) has opted for Participatory Small-scaled Irrigation Programs designed to help the poorest sections of the farming community (smallholders) whose voices are not usually heard in the conventional development interventions. IFAD’s approach in mainstreaming irrigation schemes centres on the on-farm water use and land management giving the lead role to farmers in making decisions and its day to day managerial aspects; available at: <http://publications.iwmi.org/pdf/H010663.pdf>. Small-scaled irrigation schemes are efficient and can be affordable in terms of cost, operation and maintenance in the capacity domains of the smallholders – its leadership role can

easily be handled by the local experts of water use associations or irrigation cooperatives (Hagos et al., 2009 cited in Woldegebriel, N. 2012).

2.2 Trends and challenges of Small-scale Irrigation in Ethiopia

The larger portion of the smallholder farming in Ethiopia is characterized by dependence on rain-fed agriculture and traditional farm tools. The farming techniques that characterize the sector include land preparation by oxen driven plough, planting by manual broadcasting, harvesting by hand sickle, threshing and winnowing are done manually by sticks, and farm animals trample the harvested crops, transporting of the farm produce is carried out in primitive manner - mainly by pack animals/equines and human portage – notably by women (Ayele, K., 2006). The country's rainfall pattern is highly unpredictable - both spatially and temporally, impeding the agricultural productivity and food security by recurrent droughts, which over the years have increased both in frequency and severity in many parts of the country (Bekele, A. 2014). Although, Ethiopia is considered as a water tower of Africa; only 10% irrigation potential is developed MoWE (2012) and over 55% of developed irrigation is traditional. Thus, irrigation development in Ethiopia is in its infancy, and not contributing its share to the growth of the agriculture sector accordingly. Currently limited land is being cultivated under irrigated agriculture and therefore, crop production is predominantly based on rain fed agriculture (MoA, 2011 cited in Bekele, A. 2014).

On top of varying arrays of daunting problems, the country experiences land fragmentation due to which the average land holding is diminishing. The land holding in the highlands is very minimal and steadily decreases over time – it dropped from 0.5 hectares in the 1960s to 0.2 hectares as of 2008 (Spielman, Mekonnen and Alemu, 2012 cited in Cochrame, L. 2017). This trend of reduced land holding and landlessness is expected to grow with increasing population resulting in declining productivity and food shortages in major highland pockets of the country. However, the current trends indicate that the Ethiopian economy will primarily remain agrarian in times to come. Thus, development planning must be accompanied with a sound and fair progress in the expansion of the agricultural output, mainly focusing on '*smallholder farmers*' (Ayele, K. 2006, GTP 2015/16 – 2019/20). The fragmented landholding coupled with

recurrent drought and uneven rainfall necessitates the availability irrigation facility so as farmers will get fully engaged in their farming activities throughout the year.

The smallholder farming sector usually faces inexhaustible list of challenges that they cannot unleash their full potential and break the poverty shackle. Lack of formal credit facility to these smallholder farmers is the most pressing problem among the arrays of challenges that characterize smallholders. Shortage of credit facility limits the capacity of farmers to engage in technological innovations and invest in inputs so as to increase their yields and thereby incomes to mitigate the ardent poverty they experience, and that of others. Institutional credit service in Ethiopia is distantly located in towns and urban areas with their dozens of prerequisites before granting loans to clients, especially smallholders. Farmers in Ethiopia must travel to towns of unfamiliar surroundings and impressive banks of splendid and impersonal approaches of clerk men - to get access to formal credit facility; there is too much paperwork that easily panics farmers coupled with the lengthy process of disbursement (Getahun, H. 2001).

In countries mainly characterized by smallholder farmers such as Ethiopia, the major challenge in public policy development is finding a way to materialize formal financial institutions to sustainably provide agricultural credit service to the poor smallholder farmers. This subsector in the country has been denied access to formal financial institutions and consequently remained underserved by the mainstream financial institutions. As a result, the smallholders became unable to afford the cost of agricultural inputs (chemical fertilizers, improved seeds/animal breeds, etc.).

The mainstream institutional financing services are confined to proximities and individuals who are materially abled – having enough land to present as a collateral in urban areas. Whereas because of the scattered settlements and fragmented land holdings, smallholders are excluded from these institutional credit facilities – perpetuating the historic marginality of the farming community. This results in a potential hindrance in the productivity and production of the agricultural sector – sustaining and reinforcing the spiral of their poverty. Although the revolution of Microfinance Institutions in the last two to three decades significantly contributed to the unprecedented inclusion of the rural farming families in the formal credit services, their stringent requirement of repayment, and exaggerated fear of risk kept the

majority of the agrarian community excluded from enjoying credit facilities for their day in and day out activities (Maitra, P., et al. 2014).

Financing smallholder farmers through small-scale irrigation is proved to be one of most effective ways to enhance agricultural production and productivity; hence significantly contributing to poverty alleviation. As a solution to the future of agriculture, it is proposed that intensifying smallholder agriculture by improving the management and productivity of land and water in a sustainable way is a proposed solution for both poverty reduction and agricultural growth in sub-Saharan Africa (Machethe, CL. et al, 2004).

Sustainable financing of smallholder farmers mainly through efficient water management and innovative farming techniques is a necessity, not an option. Given the existing situations, the current government of Ethiopia and its multilateral development partners, have given unprecedented attention to prioritize and finance development programs mainly of rural destination as it is evident that financing rural development and smallholder farming has a significant net benefit on the whole national economy of the country. For example, the country has experienced a double digit (10.8%) gross annual national economic growth in the last decade by focusing mainly on poverty-reduction oriented sectors of agricultural development, education health, water access, road construction and rural financing (IFAD, 2016).

Given the fact that the underdeveloped rural infrastructure, scattered settlement and the socioeconomic heterogeneity of the Ethiopian smallholder farmers, the mainstream financial and banking institutions are unable to effectively reach and finance the relevant needs of the smallholder farming community. Thus, these modern lending institutions are congested in urban areas and usually fund business activities deemed to be with less risk of financial delinquency; hence denying financial/credit access to the main economic partakers of the nation, the smallholders. There for, it is of a top priority to include the larger portion of the population elsewhere in the developing world to realize the achievement of SDGs set forth as the UN's goal for 2030 (social inclusion).

Apart from focusing only on credit service, it is noteworthy to capitalize saving mobilization from the beneficiaries themselves by community-based organizations. Ethiopian MFIs are characterized by their restricted loan terms, usually a year for agricultural credit (if any). Lack of short/long term credit facility hinders farmers from buying the costly agricultural inputs (fertilizers and improved seeds) so as to contribute for their livelihoods in later times. Smallholder farmers individually and their WUA face a challenge to present collaterals required by the conventional financial institutions as it requires legal procedures to grant loans that Cooperatives easily do.

In addition to absence/inaccessibility of the financial services, smallholder farmers who are mainly engaged in small scaled irrigation face a tremendous problem in getting a reasonable market. Although the contribution of irrigated agriculture is reputed a lot, smallholders face high challenges in terms of costs and risks while getting into the markets, that diminish the returns from irrigation. If farmers have to get rewarding benefits from investments in irrigation schemes, there has to be an equivalent investment in lubricating the marketing linkages and strengthening the infrastructures required for efficient marketing, such as feeder roads (RiPPLE (2010)).

Majority of Smallholders in Ethiopia do not have a rational place and dependable demand route to sell their products in the time of harvesting. It is a day to day practice to observe farmers with their fresh products (vegetables) in the backyard having no market in nearby areas and no road access to transport to the next town where the products are non-existent in the towns, even with expensive price. Ethiopian farmers are nor organized in a manner that they will have a bargaining power in the market places until they get remunerative price that at least pays their incurred cost to get the product to the market. The price setting in most cases in the rural Ethiopia are not decided by the market forces but are decided arbitrarily by the buyers and the middle men/brokers – who have no contribution for the transaction. Problems related to market in the case of farmers engaged in small scaled irrigation schemes is severe because agricultural products of irrigation are often easily perishable after maturity and harvesting.

Apart from these, there is no significant initiative of post-harvest handling mechanisms to increase the utility/shelf life of the product before reaching the consumer community. The agricultural marketing services (storage values, form values and place values) are in most case the missing chains in the account of the smallholders in the country. Information asymmetry in this area plays significant negative role against farmers that the information the broker and the wholesaler have is lacking in the farmers' side – making farmers victims of price taking. On the contrary, there is no potential input markets near the production sites of farmers, hence farmers buy inputs at an inflated price and the product at a deflated price – often farmers are net losers. Agricultural inputs (fertilizers and improved seeds) in the context of the region is supplied solely by the government structure and are limited to the timings of the natural rainy seasons where farmers to be involved in irrigation farming will not get net benefit from their engagement. The government supplies input in two main rainy seasons (June - August and February – April every year), but farmers who have access to irrigation usually prefer to produce in dry seasons where there is input supply. Farmers engaged in SSI have no appropriate structure of market for their product at reasonable and encouraging price, and the absence of marketing facilities and infrastructures make farmers dump their products at unpaying price (Bekele, A. 2014).

To this end, RUSACCOs must come first from the lines of intervention options in the minds of development practitioners. As a saving tool, RUSACOs pool together the resources and limited means of the poor to create source of credit thereby close the gap of credit need for low earners who otherwise be pushed back by the lack of unaffordable collaterals (Emana, T. 2014). According to the Agricultural Cooperative Sector Development Strategy 2012-2016, Agricultural Cooperatives help farmers to increase yields by pooling their resources thereby providing collective services and economic empowerment. Apart from economic benefit to member farmers, Cooperatives in Ethiopia strengthen social cohesion and belongingness among members (ACSDS 2012-2016). Rural Saving and Credit Cooperatives (RUSACCOs), are hence much responsible farmers' organization that best suits with the realities of smallholders by timely accessing loan services and links agricultural input markets with farm outputs in a much closer reach of farmers.

2.3 Characteristics of Financial Institutions and their Roles in Ethiopia

The Financial sector in Ethiopia is characterized by a large number of formal, semiformal, and informal providers. The formal institutions include Commercial Banks, Micro Finance Institutions and Insurance Companies; the Semiformal ones are Rural Saving and Credit Cooperatives (RUSACCOs) while the informal institutions are social groups that existed long ago with the society for lending in special events/ceremonies, for example, Iddir, Equb serving respectively for unexpected worrisome events and mutual/rotational saving. Private money lenders, relatives and trade partners can also be considered as informal financial providers in the context of Ethiopia.

The Banking sector in the country comprise three government owned banks (Development Bank of Ethiopia, Commercial Bank of Ethiopia, and Construction and Business Bank) that provide the lion share of the credit service in the nation – more that 60% of the national loan Portfolio, 15 Private Commercial Banks that that are skewed in the urban centres (AEMFI 2010). As clearly indicated by that document, the number of MFIs are 30 in the whole country as of 2010 that target the active/able poor, particularly capitalizing on women in their portfolio engagement (54% of their business deals). Although the mushrooming boom of the MFIs in Ethiopia since 1996, their overall contribution to the national loan portfolio is insignificant compared to the prevailing need of the population – the MFIs barely cover only less than 7% of the credit requirement of the country, and the majority it also is covered by the government owned MFIs.

Insurance companies, on the other hand, are still lagging behind and their contribution to the national economy is dismal (0.2%) that only 0.1% of the Ethiopian population has access to their services (AEMFI 2010), and even the existing insurance companies are skewed towards corporate clients (cars, business and staff members) but do not make sense of the agricultural, particularly the smallholder sector.

Saving and Credit Cooperatives as a grass root organization are key contributors and critical instruments to the achievement of the development programs, such as rural development strategies and food security schemes. Even though there are numerous number of RUSACCOs (26,000 in 2008), it is roughly estimated that only 5,900s focus on the provision of rural financial services addressing only 0.1% of the total

credit requirement in the country (AEMFI 2010). Furthermore, the administrative and legal frameworks of the financial sector in the country has not institutionalized RUSACCOs that RUSACCOs are responsible for FCA, which is not an institution with specific financial literacy. Due to this, the structural functionality of the RUSACCOs is weak that it cannot compete with other formal MFIs in their application to financial grants form donors and other external bodies.

The other giant, that majority of the country's population get access to, is the informal sector. Being in a close reach to the poor people makes it the only larger and accessible source of financial inclusion. Besides lenders of high interest rates, usually called loan shark, there are relatives, friends and family members in the context of Ethiopia to finance informally. As of the findings of AEMFI (2010), the informal sector in Ethiopia accounts for almost 20% of the credit service.

In Ethiopia, where more than 80% of population is from rural background employed in agricultural activities, the importance of financial inclusion cannot be exaggerated. Ethiopia, being one of countries under-financed as its financial institutions are still limited in number and proximity. It is a lay man's awareness that major financial institutions in Ethiopia are tilted towards major towns of attractive infrastructural densities, with no risk of delinquency leaving the rural chunk of the people unserved.

Financial services are critical to bring forth sustainable economic growth, tools for business and investment; and hence poverty reduction and contributing for food security generally in Ethiopia and particularly in the agricultural sector (AEMFI 2010). Households need credit facilities to diversify economic activities and increase agricultural production via improved seeds and fertilizer. It is obvious that financial institutions give various services: saving, payment, and insurance facilities. Saving services ensure safe and generative storage, and excess of it can be channelled to the financial market having a positive role than simple hoarding of the cash otherwise at home. Payment services easily facilitate exchange of goods and services and the Insurance services assure spreading of unforeseen risks among the various players. Financial services, are thus essential for the protection and improvement of the rural livelihoods.

However, in the context of Ethiopia, the distribution of financial institutions is skewed towards major cities. All the Financial Institutions in the country and the region have

their branches and offices are situated in at least, Woreda/district towns. Even though they are cropping up in zonal and district town in the regions, they are stringent in their requirements and reluctant to fund/give loans to smallholders calculating the risk of perceived delinquency. These mushrooming number of financial institutions run only after making their lucrative profit from selective funding to rewarding micro sectors and deny access to the dwindling - the smallholder agriculture. As the report by the AEMFI 2010 indicated, the assets owned by financial institutions in Ethiopia is only about half of the national GDP – indicating the overall asset of the country is not channelled through and in the Financial Institutions. Subsequently, the ratio of bank deposit to the GDP in Ethiopia is much below the benchmark countries account for their GDPs.

Figure 1: Ratio of Bank Assets to the GDP

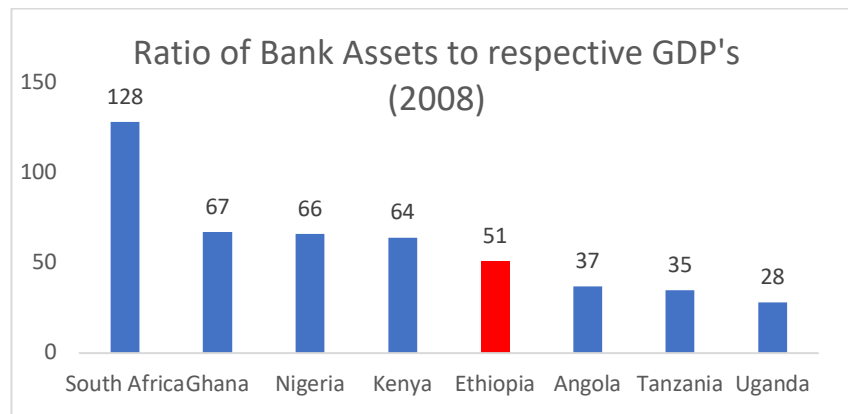
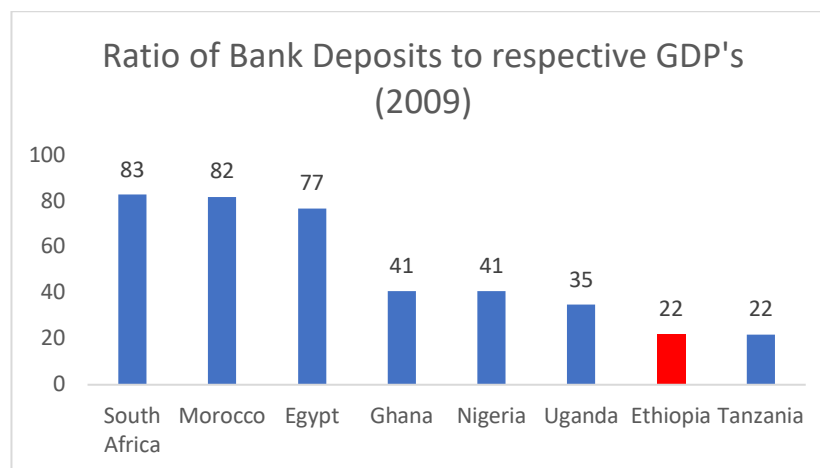


Figure 2: Ratio of Bank Deposit to GDP



Computed from AEMFI 2010

2.4 Roles of Irrigated Agriculture in Food Security

Irrigated agriculture in Asia increased the yield per area between 100-400% for most of the staple crops (IPTRID 1999). This magical shift assures the potential of irrigation in increasing agricultural yield that can take millions of the hunger from the valleys of poverty. If the production and productivity of cropping fields increase with manifolds like this, it is evident that the yield can significantly contribute to the reduction of food price. The same report reveals the case in India that increasing the area under irrigation by 30% between 1970-1985, from 31.1 million ha. to 41.5 million ha. resulted in the fall of grain price by 20% relative to the price index of commodities. The reduction in food price had a meaning full beneficial impact on the poor households' real income, who spend a large amount of their incomes on food stuffs. A study conducted in 10 Indian villages in varying agro climatic zone reveal that an increase in irrigation by 40% was equally effective to reduce poverty as providing a pair of bulls, increasing education level and as increasing salary/waging rate (Singh et al, 1996 cited in Tesfaye, A., Bogale, A. & Namara, R., 2016).

Small scaled Irrigation schemes provide households ranges of benefits that can be direct and indirect. Its direct benefits may include the farming household's opportunity to have more and increased stable flow of income from the farming plot as a result of intensified cropping, increased yield per unit area, technology utilization, being able to create employment opportunities in their own farms throughout the year which otherwise farmers produce once a year. Indirectly, availability of irrigation facility may reduce the rate of outmigration in areas where migration is severely debilitating phenomena of the youth, expansion of non-farm employment, lower food prices, better nutrition, greater urban-rural contact, hence creating social networks to break the rural urban divide (IPTRID 1999). When there are enhanced irrigation schemes in place there will be an opportunity for the rural landless to get employment in the nearby farms while taking care of their families rather than going to the distant towns for labour sale.

Strengthening irrigated agriculture can enable rural households to adopt new technologies to intensify cultivation, increase farm income, general livelihood improvement and quality of life. (Hussein et al., 2004 cited in Tesfaye, A., Bogale, A.

& Namara, R., 2016) identified five key dimensions of how irrigation schemes contribute to uplift of the socioeconomic lives of the rural community:

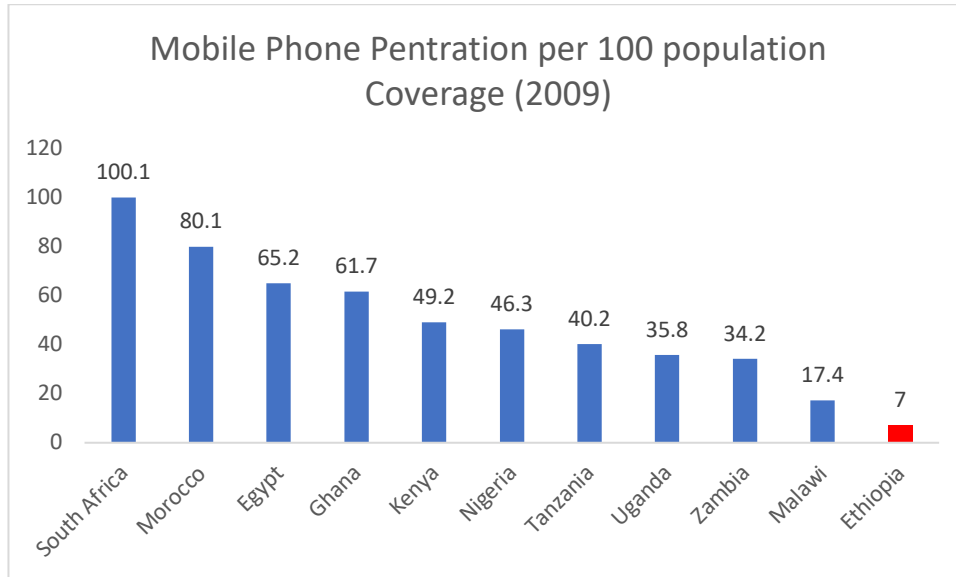
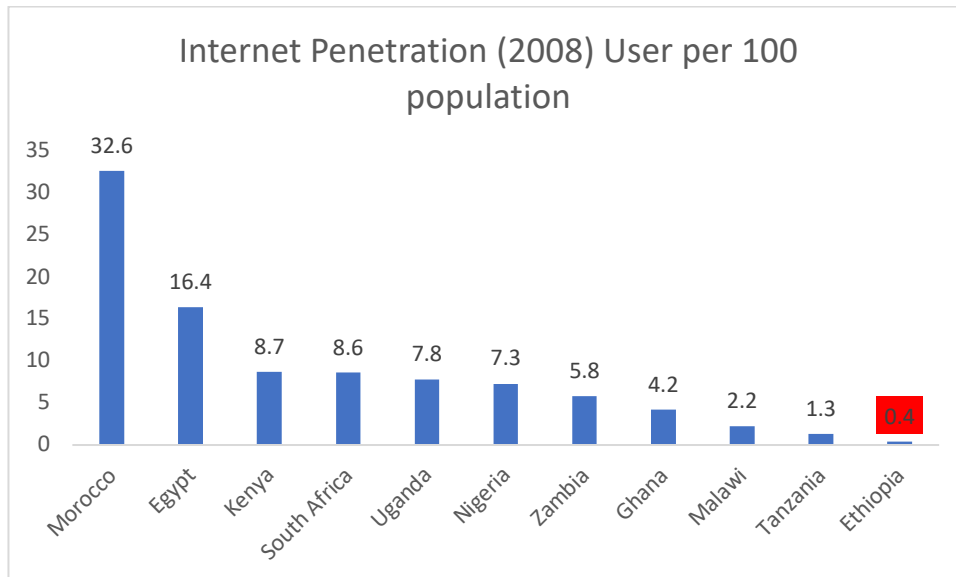
- *“Production, income and consumption, employment, food security, and other social impacts contributing to overall improved wellbeing.”*

Availability of irrigation farming has a significant effect on the incomes, lives and health of other non-farming communities/town by providing highly nutritious diets (fruits, vegetables, spices, roots and tubers) which otherwise are purchased and transported from distance and sold in the local markets at high prices. A study conducted by IFAD (2005) indicated that farmers in Ethiopia, especially in the Oromia and Southern Regions who are engaged in small scaled irrigation increased their income significantly by sale of short maturing vegetables and improved their diets via vegetables. The same study showed because of the introduction of the participatory irrigation schemes, the households’ food gap months decreased from 6 to 2 months, and households used the cash generated by sale of vegetables to buy staple foods in the food deficit seasons.

2.5 Technology Infrastructure in Ethiopian Micro Financial markets

The employment of technology for financial providers helps them in delivering automated services even in remote settings. Contemporary technological innovations such as POS, ATM-Machines, Smart Cards and Mobile Phone-based banking systems speed up the development and outreach performance of financial institutions reducing transaction costs to a significantly higher level. These technological engagements require high quality internet infrastructures and trained personnel on these specific banking techniques. However, these facilities are missing in Ethiopia, the country lags far behind other African countries in terms of mobile banking and the internet penetration (AEMFI 2010).

In terms of technology use, Ethiopia is incomparably far behind other benchmark countries of Africa. This indicates majority/all of Ethiopian financial transactions are carried out manually and based on paperwork.

Figure 3: Mobile Phone Penetration per 100 population**Figure 4: Internet Penetration**

Analysed from AEMFI 2010

Figure 5: ATM Machines per 100K population

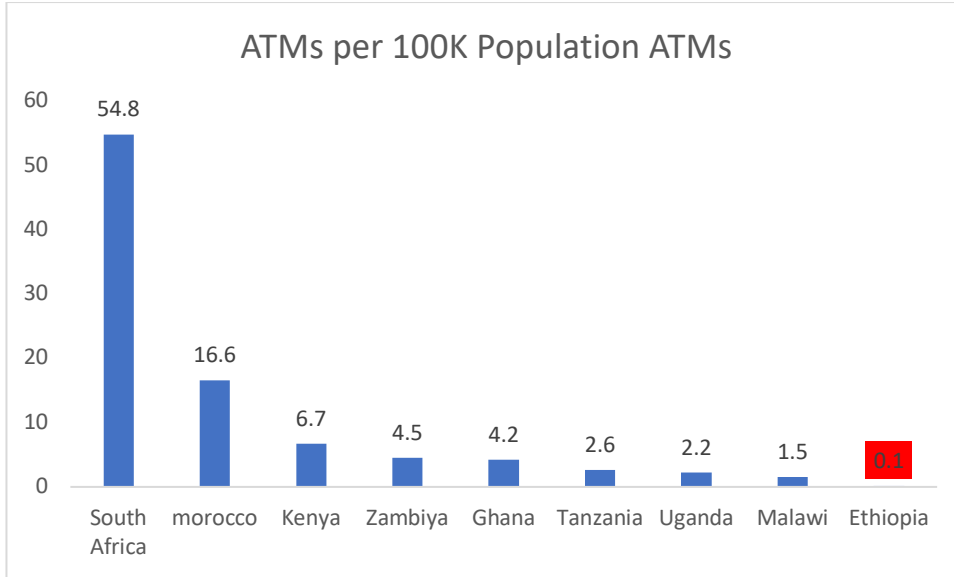
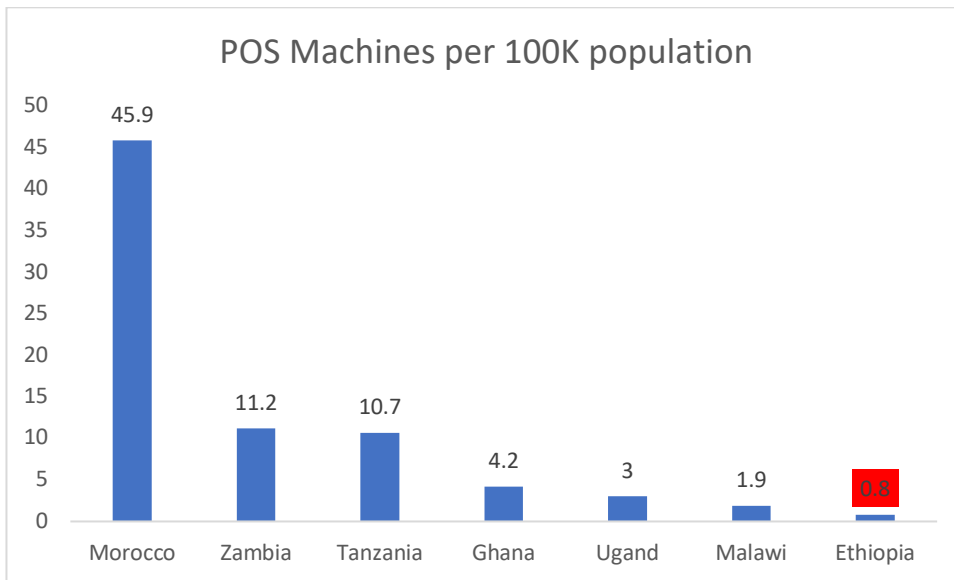


Figure 6: POS Machines per 100K population



CHAPTER 3

OBJECTIVES AND METHODOLOGY

3.1 Objectives

The study has the following main objectives:

1. To identify the role of small scale irrigation in households' livelihoods;
2. To assess factors (critical challenges) that impede the adoption of Small Scale Irrigation;
3. To identify existing sources of funding to finance Smallholders and associated challenges;
4. To investigate the post-facto challenges of sustainable production of small scale irrigation schemes.

3.2 Major Research Questions

1. What are the roles of Small scaled irrigation in impacting the households' livelihoods and food security?
2. What are the constraints that hamper the adoption of small-scale irrigation by smallholders and limiting factors of farmers' participation in the execution of small scale irrigation schemes?
3. What are the best possible approach of financing smallholder farmers and requirements of financial institutions to fund clients?
4. What are the post-facto challenges of small scale irrigation projects that smallholders face in their attempt to sustainable production and how-to device ways to tackle these inconsistencies.

3.3 Conceptual framework: Irrigation - Improved Livelihoods Nexus

Historically, agricultural financing in Africa has been very low compared to other developing regions of Asia and Latin America. For example, sub-Saharan Africa's public expenditure on agriculture between 1980 and 2005 accounted for only 4 to 5% of the total national budgets compared with 8 to 14% in Asia (Nyagah, L. ed., 2011). Gross under capitalization in smallholder agriculture, particularly water resource management is one of the foremost factors that undermine the magnificent importance of the sector. Poor investment in key facets with multiplier effect, such as agricultural research, enhancing irrigation, rural credit and finance services, rural infrastructural development, agricultural mechanization, agricultural value-chain development, human capital development, etc. are lagging behind (Nyagah, L. ed., 2011).

Even though it is a common place in recent literature to articulate pluralistic challenges that smallholder farmers face, fulfilment of the agreed promises of donor and public funding is discouraging (Easterly, W. 2006). Inaccessibility and unaffordability of institutional credit facility remains one of the leading bottlenecks to investment and production of smallholders, usually hindering farmers' capacity – ultimately leading them to declined level of production, thereby reinforcing poverty. This indicates the detachment of rhetoric and practice in the battlefields of poverty – sometimes even historic and steady withdrawal of multilateral funding agencies and governments from funding the smallholder sector. The prime source of funding for smallholders in Africa, World Bank, for example, had 39% of its lending going to Agriculture in 1978, but only 12% in 1996 and further down to 7% in 2000 (CAADP, 2003). From practical point of view, many of the key investments and merit goods such as agricultural research, irrigation, market access, education, health facilities, etc. necessitate public expenditure because these investments are of no lucrative profit (private financing schemes lack incentive to engage in this perceivably risky enterprise of financing smallholder farming). Hence, the public sector, other multilateral and bilateral funding agencies (*focus needed*) are expected to fund **lending and non-lending activities** (Policy dialogue, knowledge management, and partnership), research, infrastructural development necessary to stimulate and intensify agricultural transformation.

Africa's legacy of poverty and hunger made it a poster child of extreme destitution and opportunity deprivation in our times (Nyagah, L. ed., 2011). Yet it is a worth

noting to capitalize on short and medium term agricultural growth, transformation and poverty reduction prospects to link with the successful transformation of the smallholder agriculture – given its primordial dominance on the livelihoods of the continent (CAADP, 2003). The prevalence of rural poverty is a challenging issue that can be addressed by improving agricultural performance via enhancing small scale irrigation, agricultural input diversification (improved seeds and fertilizer), improving market access and reducing the risks faced by smallholder farmers, and investing in rural infrastructure and enterprises.

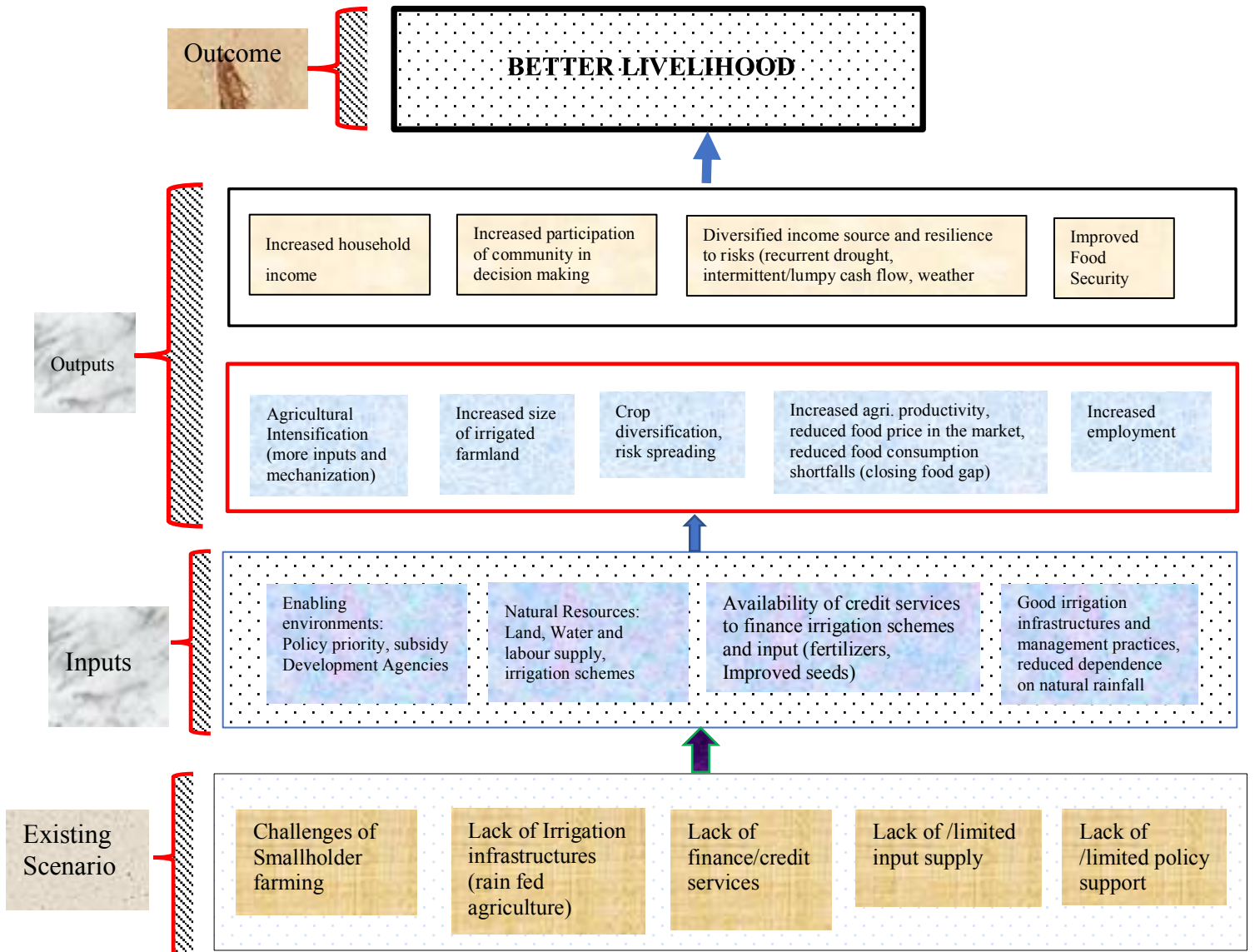
Financing smallholders throughout history in Africa passed so many ups and downs, for example, in early 1990's many African Nations were imposed by the Neoliberal ideas of Structural Adjustment Program (SAP), New Public Management (NPM) intending to create small governments – but big governance (hallowing the government structures, curtailing government expenditures – even on merit goods of health and necessities for mere existence, like food. History taught us that agricultural growth cannot be sustainably attained solely by market forces and mere increase in investment due to market inefficiencies - the rule of the ideal game of market is frequently violated by the winners, smallholders are usually losers. This and other practical failures of imported packages need urgent reengineering and involvement of the governments and other agencies of Official Development Assistance (ODA) in creating an enabling environment and making markets work for the poor, specifically aligning the priority needs of smallholders with the CAADP's continental frameworks (CAADP, 2003).

Farmers in the study area do not produce enough and all year round due to unpredictable and sometimes untimely rain fall, under usage of agricultural inputs, lack of relevant credit services in their reach. Thus, adoption of new innovative technology, for example, irrigation is considered as a driving force to materialize the mission of achieving food security and poverty alleviation. The conceptual framework above indicates how investment in irrigation schemes can impact the whole framework of the livelihoods of smallholder farmers which formerly is fully dependent on rain fed agriculture. Investment in small scale irrigation is able to depart the trend, hence farmers will get fully employed in their farmlands, encouraged to produce 2-3 times a year and use more of improved seeds and chemical fertilizers to increase their productivities to many folds (Woldegebriel, N., 2012).

The conceptual framework (the next flow chart) depicts the phenomenal role that intervening development initiatives through small-scale irrigation has, in the overall livelihoods of the farming community. It has a potential to break the extreme dependence of the farming communities on rainfall, increase the size of the irrigated fields, and generate dependable opportunity of employment (both off/on-farm). Irrigation schemes encourage farmers to efficiently use agricultural production improvement inputs, such as chemical fertilizers, improved seeds, and crop protection aspects of disease and pest control. Availability of irrigation facility enables farmers to diversify the crop mixes so as farmers are able to spread risks of crop failure in mono culture agriculture. Ethiopian farmers in general and farmers in the study area in particular face an annual food gap of 2-5 Months that investing in irrigated agriculture has a tested potential to reduce the households' food gaps and consumption increase. Irrigation investment in tropical countries is a critical intervention in rural development having direct and indirect impacts on household food security, poverty alleviation, and improvement of household livelihood (Bhattarai et al. 2007 cited in Woldegiorgis, N. 2012). Small-scale irrigation schemes result in increased consumption expenditure and asset accumulation. Furthermore, irrigation has a beneficial effect on reducing food price so that the low/middle-income urban and non-farming rural households can easily afford and get access to the required food at fair prices (Huang, Q. et al. 2006).

The role of irrigation schemes is paramount in impacting trends of farm productivity, food security and boosting households' livelihoods enhancement. As a practical research conducted in China, irrigated agriculture has a tantamount effect in crop yields and crop revenues (Huang, Q. et al. 2006). Irrigation schemes do have a relative better impact in increasing incomes of poorer farmers than it does in richer families, since incomes of the poor areas rely more on agriculture and allied livelihoods than farmers in richer areas (Hung, Q. et al.2006).

Figure 7: The Irrigation – Livelihoods Conceptual Framework



3.4 Methodology

This study used fused research method (Quantitative/Qualitative) to capitalize on the strengths and offset the weaknesses of the independent quantitative/qualitative methods.

3.5 Nature of the Data

The data source of the study is a cross-sectional household semi-structured interview, FGDs, and KIIs. The study covered one community from the catchment of Manisa irrigation scheme where the potential beneficiaries are sampled, starting from February to April 2018. Quantifiable variables are analysed by the Microsoft excel to display graphics and charts.

3.6 Sampling Technique

This study purposely took place in Woshwocha Dekaya Kebele, where the MoA implements the Participatory Small-scale Irrigation Development Programme phase II (PASIDP II). The MoA implements the program and the International Fund for Agricultural Development (IFAD) supports financially. First of all, the entire potential beneficiaries of the irrigation scheme are enlisted and alphabetically arranged to avoid locational/proximal bias while sampling. From the 168 HHs in the community, 50% were sampled by systematic sampling technique based on the serial numbers (2,4,6, 8, ... etc.) which becomes 78 HHs to be studied.

3.7 Data Collection Method

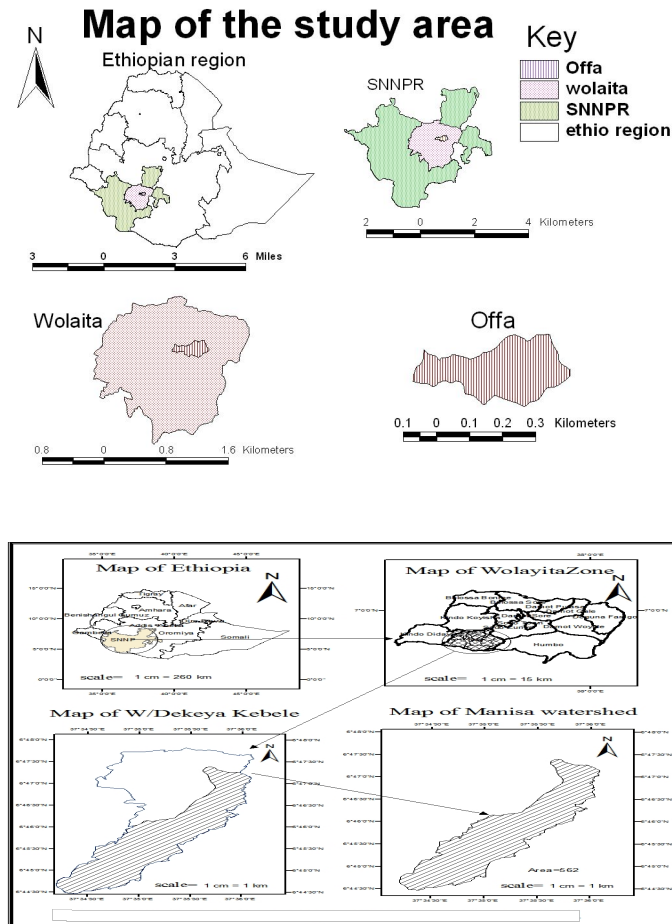
The study in addition to primary engagement of conducting direct survey employed a secondary data survey, house to house interview, Focus Group Discussions, Key Informant Interviews to help in producing valid finding and draw sound conclusion and policy implication to recommend future researches.

Table 3: Data Collection Methods, briefed

Collection Method	Brief Description
HH Survey	A questionnaire for general and issue specific HH information is administered to the sampled respondents;
FGD	Two groups from the larger community irrespective of participation in the irrigation scheme, representative of males, females, youth, elders and different social institutions took part in discussion questions able to extract more inner perceptions and feeling which otherwise are impossible via questionnaire surveys.
KII	Expert groups from government offices and educational institutions took part in this interview so as to incorporate educated opinions and informed views into the practically tested experiences of farmers; mainly focusing on policies and practices.
Secondary	Different previous studies are reviewed from academic journals, official reports and working papers, policy documents for the development of the conceptual framework and evaluate the findings of the present study on the basis of previous works.
Financial Institutions	As a key stakeholder in financial remediation of the farmers, financial institutions that operate in the area were became part of the study. These included: Commercial bank of Ethiopia (Gessuba Branch), Vision Fund Micro Finance Institution, Omo Micro Finance Institution, Busha Saving and Credit Cooperative were interviewed for the topics mainly focusing on the priorities of their loan portfolio, Operational mechanisms, immediate targets, requirements of credit provision, etc.

3.8 Description of the Study Area

Figure 8:



Source: South Design and Construction Supervision Enterprise (2017)

The maps show the specific area of the study (Woshwocha Dekaya Kebele) the Manisa Watershed where the IFAD's Participatory Small-scale Irrigation Program II (PASIDP II) scheme is being implemented.

Wolaita

Wolaita is one of the central zones in the southern regional state of Ethiopia. The Zone is organized into 12 districts/woredas (Bolosso Sore, Damota Gale, Damota Woyde, Humbo, Soddo Zurira, Kindo Koysya, Ofa, Bolosso Bombe, Damota Sore, Kindo Didaye, Damota Pulassa, Duguna Fango) and three town administrations (Soddo, Arekka, and Boditi).

Agro ecologically, the land of Wolaita ranges from 500 to 3,000 meters above sea level and is classified into three agro ecological zones: high-altitude (*dega*), mid-altitude (*woyna dega*) and low-altitude (*kola*). The larger part (60%) is mid-altitude,

with a small percentage of high altitude areas, and the mid-altitude and high-altitude areas account for 75% of the population, and account for 4/5^{ths} of the food crops grown in the Zone. The areas of lower elevation, account for 1/3rd of the land area, mainly parts of Humbo and Duguna Fango districts, dominantly known to engage in producing low land cash crops like cotton and tobacco. Roots and tuber crops on the area are mainly domesticated in mid to high latitudes (Rahmato, 2007 cited in Cochrane, L. 2017).

Demographic Situation of Wolaita Zone represents one of the most densely populated parts in SNNPR, and in Ethiopia too. As per the population projection based on the National Census of 2007, the total population of Wolaita in 2015/16 was estimated to be 1,969,196; of which 1,596,448 (81%) is occupied by the rural people – indicating that the population is rural dominated (BoFED, 2016). Interestingly the same forecast shows that the rural population is slightly dominated by the female members indicating women are more engaged in smallholder subsistence family agriculture than their male counter parts – whereas, in the urban context, the population is male dominated.

Rainfall

The mean annual rainfall of Wolaita as recorded in Soddo Metrological station is 1269.5mm. The annual rainfall of ranges between 312-1882.5mm. The main rainy season extends over the period of mid-March to mid-October with its peak from April to September.

Figure 9: Average Monthly Rainfall

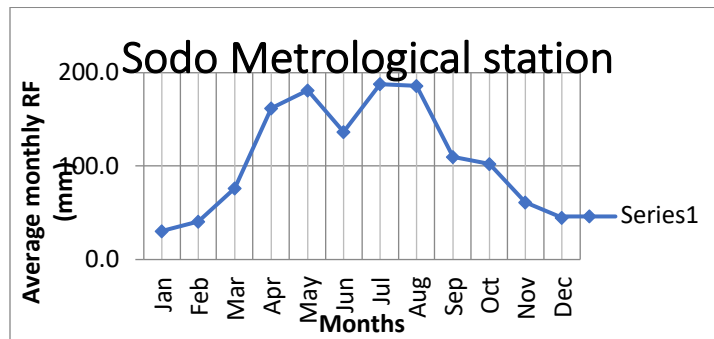
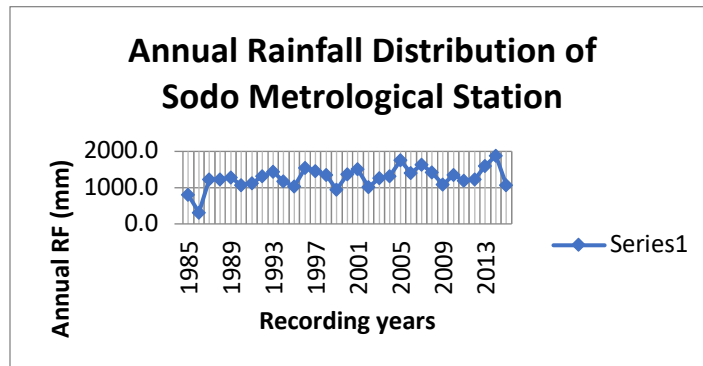


Figure 10: Annual rainfall

Source: South Design and Construction Supervision Enterprise (2017)

Temperature

Temperature of the study area, Woshwoch Dekaya is of similar elevation and agro ecological zone with Soddo. The mean annual temperature is recorded to be 20.3°C. The mean monthly maximum temperature ranges from 28.9°C in March to 22.6°C in July. Mean monthly minimum temperature ranges from 15.9°C in March to 14.0°C in December-January. Temperature variation is not significant in the area; hence the area is considered to be fairly uniform and suitable for most agricultural productions. Table below, shows the mean maximum and minimum temperature at Sodo meteorological station.

Table 4: Annual Temperature

Var.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	annual
T max	27.5	28.5	28.9	27.2	25.1	23.6	22.6	22.9	24.2	25.6	26.1	26.4	25.7
T Min	14.0	15.3	15.9	15.4	15.1	15.0	14.3	14.5	14.7	14.5	14.8	14.1	14.8
Mean	20.8	21.9	22.4	21.3	20.1	19.3	18.5	18.7	19.4	20.1	20.4	20.2	20.3

Source: South Design and Construction Supervision Enterprise (2017)

The demographic situation in the study area, Ofa district according to the estimation of the CSA 2015/16 is 134,778 in total and of this, the number of females is 68,649 and that of males if 66,128. The rural population accounts for 83% of the population having an absolute number of 111, 639 (Males – 54,491 and Females – 57,148). The rest part of the population, 23,139 (Males – 11,637 and Females – 11502) accounting for 17% lives in town areas.

CHAPTER 4

RESULTS AND DISCUSSION

The research design and the conceptual frameworks are all presented in the preceding sections. This portion accordingly elucidates the descriptive findings and narratives of the field work in the community briefing the general overviews of the problems smallholders face in terms of accessing financial services for their agricultural activities and major challenges hindering the adoption and sustainability of irrigation schemes and farm productivity based on the household surveys, FGDs, KIIs and in person observations.

4.1 Socioeconomic Characteristics

The socioeconomic data shows that the community is predominantly male dominated that every household by default is represented by male members – this case husbands. It is a common/ordinary awareness in the community if the household is headed by a woman, the husband died or the woman did not remarry. The woman heads of households in the study are all widows. In the community, it is a cumbersome task to get women by an ad hoc call for a meeting; if one wants to have time with women, it has to be specifically addressed to women even specifically inviting by name. If the target of intervention is not sensitive and affirmative, women are not easily visible in the community in conventional manner.

Table 5: Household Socioeconomic Characteristics

Household Variables	Values
Male heads (%)	83
Married (%)	89
Widow (%)	8
Widower (%)	1
Divorced (%)	1
Age (mean)	39
HH size (mean)	7
Land size (mean ha.)	0.94
Average Household Income	15,406
Average Household Expenditure	6,487
Rate of Literacy	2

Agriculture as in many other rural areas of Ethiopia is the dominant/almost only means of the livelihood of the people in the study area. Even though there are many other supportive activities, such as petty trade, pottery, donkey pulled carts and motor scooter (mainly the young), embroidery, carpenter and masonry works, they are all rudimentary and dependable cannot be dependable source of livelihood – even traders in recently urbanizing villages are engaged in farming by local cheap labour force.

4.2 Access to Natural and infrastructural Resources in the community

Access to resources both natural and man-made infrastructural are important foundations for the adoption of different technological innovations for households. Livestock and farm land are the key resource endowments in the community, contributing positively to the social acceptance and-status in the community in the area. There is one all-weather road crossing the whole kebele, connecting to other neighbouring sub-district, one veterinary health post, one primary school, one farmers training centre. Even though the main kebele, the core is electrified, the community at large has no electricity service, no health general health centre.

4.3 Roles of Small-scale Irrigation in the lives of HHs (in terms of livelihoods and food security)

Needless to say, is small scaled irrigation has tremendous roles to play in improving food security, job creation, income security, increased purchasing power of other industrial necessities, etc. In this study, participants of the FGD divided the roles of irrigation into two: Direct and Indirect roles. In terms of the immediate HHs, there will be consistent and sustainable production of vegetables and other cereals. Group members thoroughly discussed the roles and reached in consensus over the following points as direct roles in the lives of the smallholders:

1. Securing food availability throughout the year;
2. Access to quality nutrition (vegetables) and high price fetching marketable products;
3. All the members of the HH who are able and of a working age can engages in homestead and backyard farming (employment creation – mitigating high risk rural – urban migration);

4. Dependable HH income security by sale of vegetables and other early maturing crops throughout the year, hence increased purchasing power enjoy other industrial commodities from the nearby towns.

Concerning indirect roles, the FGD pointed the multidimensionality of irrigation schemes in its irreplaceable importance, for example it mitigates the rate of rural-urban migration of the youth which is debilitating phenomena in the community (by creating year-round employment opportunity in the backyards), the balanced diet because of fresh vegetables and tropical fruits produced in the backyards, the HH is able to lead a healthy life, decrease child mortality, the generation will be educated because today's families will afford educational costs, etc. Members in the discussion also explained its spill-over effects as it gives access to other non-farming members in the nearby towns of limited income to easily get nutritionally high value fresh vegetables at reasonably affordable prices. Improve the farmers' social acceptance and status after washing the dirt of the chronic poverty attached to the rural farming HHs as their identification for long time. The discussion over this topic was hot and emotional as they have seen and heard the importance of the small scaled irrigation project that took place in the other part of their community. As they are frequently referring to that scheme, it significantly boosted the livelihoods of the beneficiaries: Some HHs afforded college tuition for their children which would be unthinkable had there not been that irrigation facility, enabling them to produce high value vegetables in the dry seasons with premium market price/demands.

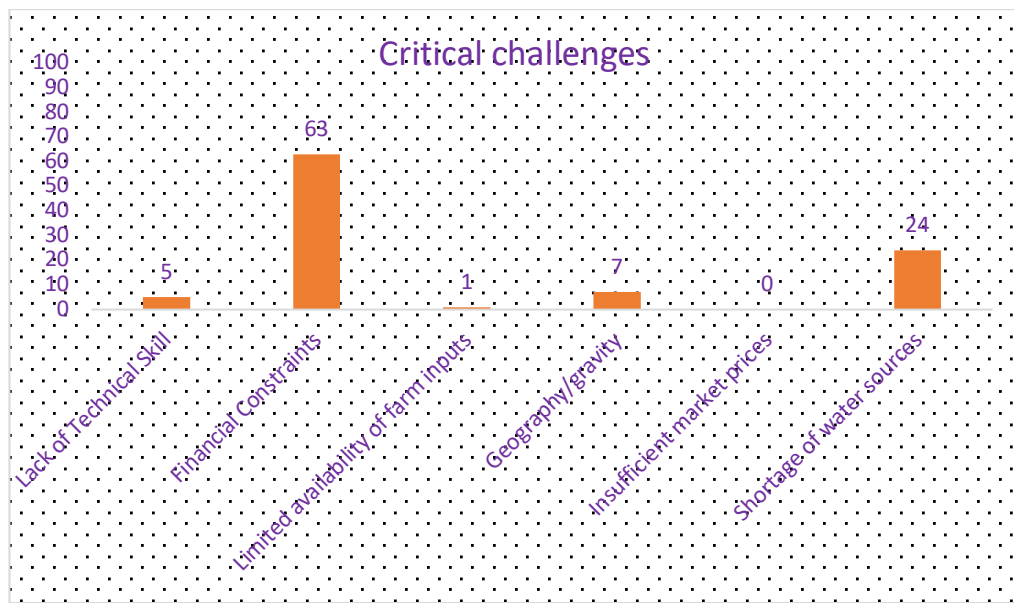
4.4 Most critical challenge for irrigation

Small scaled irrigation schemes do have a tremendous potential of boosting the economic settings and diversifying the livelihoods of the smallholders engaged in irrigation. The first and foremost challenge farmers encounter in this community in their struggle towards food security is lack effective moisture (rain) to water their farming field. This king problem, lack of irrigation facilities and infrastructures are backed by many other problems that badly hamper the development of irrigation projects elsewhere in the Sub-Saharan context. Farmers in Woshocha Dekaya, had once seen the vibrant result of irrigation project on the same river Mani'isa over the

upper sub micro water shed constructed jointly by the district office of agriculture and other local NGO before some 5-6 years.

Sampled HHs enlisted and then ranked some of the prominent challenges hindering the continued and lasting benefits of small-scaled irrigation schemes in the domain of their experience. These critical challenges included: Financial constraints, High pressure on water/shortage of water, lack of technical skill, limited availability and affordability of farm inputs, gravity/topography, and lack of effective management. 63% of the respondent HHs raised financial shortage as the main driving problem of the irrigation schemes as the cost of construction and affording the input price in irrigated agriculture at current price is unmanageable by the farmers of the community independently. They pointed that the construction work at the first place has to be seriously supervised so as to ensure quality infrastructure in place covering all the flow channels and division boxes by strong masonry lest it be easily broken and the water gets wasted. Another chunk of the respondents (24%) raised the issue of inconsistency water flow (size of water usually decreases in dry seasons) as the most debilitating for their crop fields. These groups are seemingly too far from the river bank that they had never experienced irrigation agriculture in their lives apart from in-situ moisture conservation practices in their farmlands. Technical skill either to the pioneering work or the running care/maintenance is one of the key concerns a few farmers raised, these farmers account for 5% of the respondents.

Figure 11: Critical Challenges of Irrigation as per the HH interviews

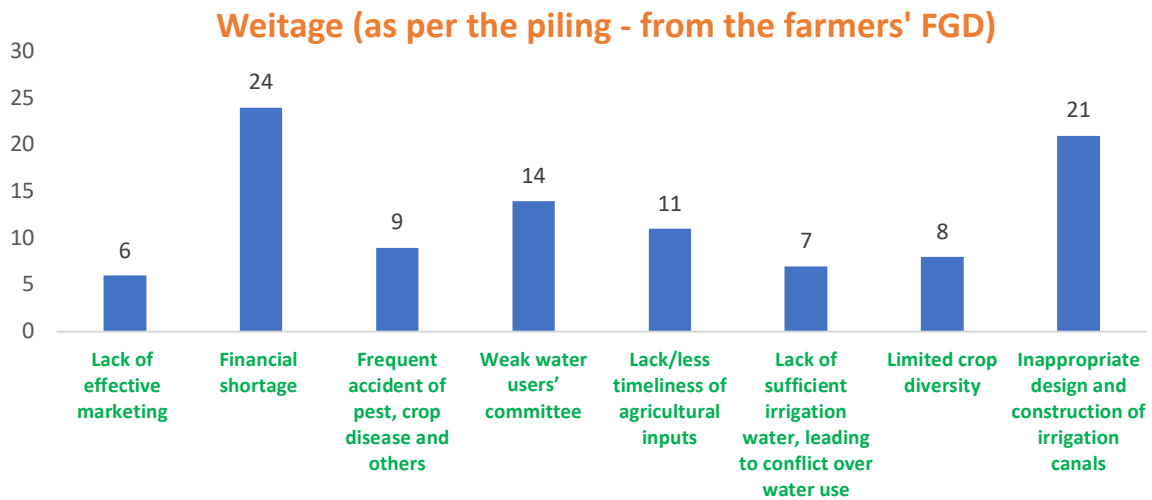


Gravity/geography of the natural terrain is the other main challenge for farmers to participate in the irrigated agriculture as most of the small scaled irrigation projects are gravity driven to reach the farmlands therein. This concern is practical and very valid that the irrigation infrastructure being constructed is to directly benefit HHs that are situated down the diversion route of the natural water way. However, the upper portion of the kebele approximately 70% do not get direct benefit from the project. In the discussion with the Focus Group and other Key Informant Interviews, participants highly need other means for the upper riparian HHs either by construction deep wells and pumped irrigation initiatives so as the distribution of benefits in the same kebele will be reasonably fair.

In the Focus Group Discussion, members in their discussion of the critical problems in their community concerning irrigation schemes enlisted and weighted by the proportional piling: Financial shortage accounting 24%, Inappropriate design and construction of irrigation infrastructure 21%, Weak administration/WUA committee 14%, Lack/less timeliness of agricultural inputs 11%, Incidence of crop pests and disease 9%, Limited crop diversity 8%, Shortage of potential water for irrigation 7%, Lack of effective marketing linkage/outlet 6%.

The proportional piling was done in such a way that 100 maize seeds are used to visually evaluate the severity of problems in a way easily understandable in their context. 100 maize seeds are then allocated to each problem identified and counted to rank the problems according to their significance. This is a participatory tool to rank and prioritize problems according to their severity in a farmer-friendly manner.

Key Informants (expert groups from District agricultural offices and Instructors from Soddo college of Agriculture) listed the following points as major challenges that smallholders engaged in small scaled irrigation face mostly: Lack of technological innovation, Shortage/failure to use full package agricultural inputs, Dependence on rainfall, its unpredictability and lack of soil moisture/irrigation facility, Lack of awareness and access in producing high price fetching cash crops, Farm fragmentation and decreased soil fertility, Lack of financial capacity (credit services) to implement small-scale irrigation schemes, Topographical imbalance, Climate variability/recurrent drought.

Figure 12: Critical Challenges as per the FGD

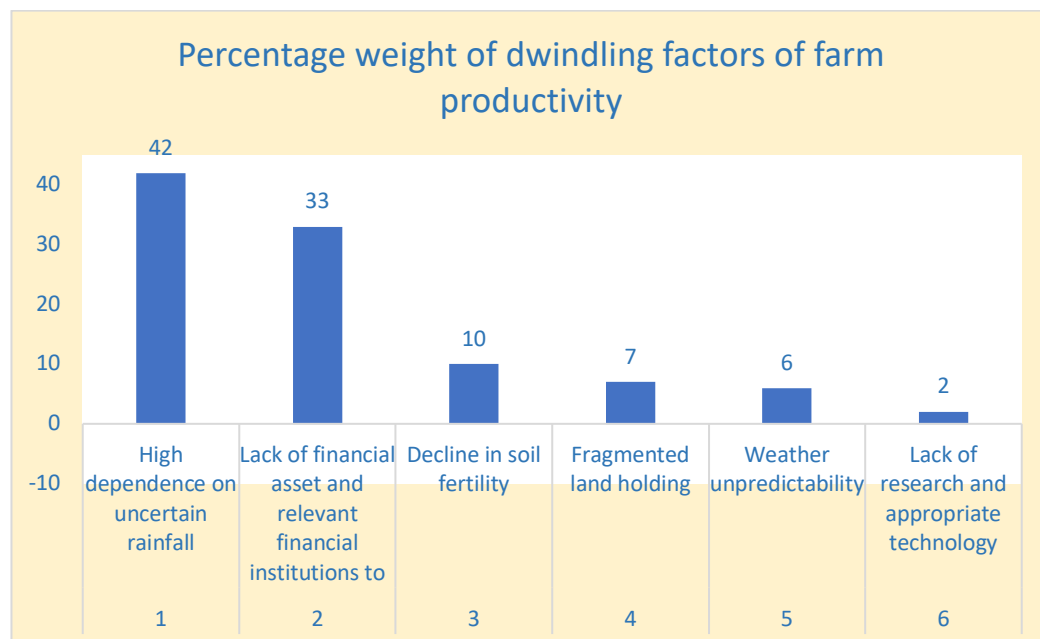
Towards factors that stagnate agricultural yields, different factors are responsible for the steady unpredictability of the agricultural sector in Ethiopia. Ethiopian agriculture as a whole is constrained by various external and internal problems resulting to its stagnation and poor performance. Haile Kibret puts the following factors as the major factor to contribute for the Ethiopian Agricultural stagnation:

“Low resource utilization, for example the proportion of cultivated land to the total arable and the amount of water readily available for irrigation is far below the arable capacity, hence pushing the country’s agriculture only to be fed by natural rain; Low tech-farming (wooden plough by oxen and harvesting by sickle), Over-reliance on chemical fertilizers but underutilization of techniques of soil and water conservation, Ecological degradation of potential arable lands, Unbalanced population growth resulting in rural unemployment, etc.” (Kibret, H., 1998).

Yonas Ketsela on the other hand argues effective policies of the government in terms of land ownership, credit facility, crop insurance, etc. are not well handled or not available in a meaningful manner and the issue of pro-poor agricultural investment apart from rhetoric is not practically water holding and neglected in the field (Ketsela, Y., 2006).

The FGD, similarly in the in-depth discussion over the challenges that dwindle agricultural productivity by following the same method of proportional piling extracted that high dependence on steadily uncertain rain fall (42%), lack of financial asset and relevant financing schemes at reach (33%), Decline in soil fertility (10%), Fragmented land holding (7%), weather variability (6%), and lack of appropriate technology (2%). These are quantified and displayed in the following graph;

Figure 13: Factors dwindling agricultural Productivity

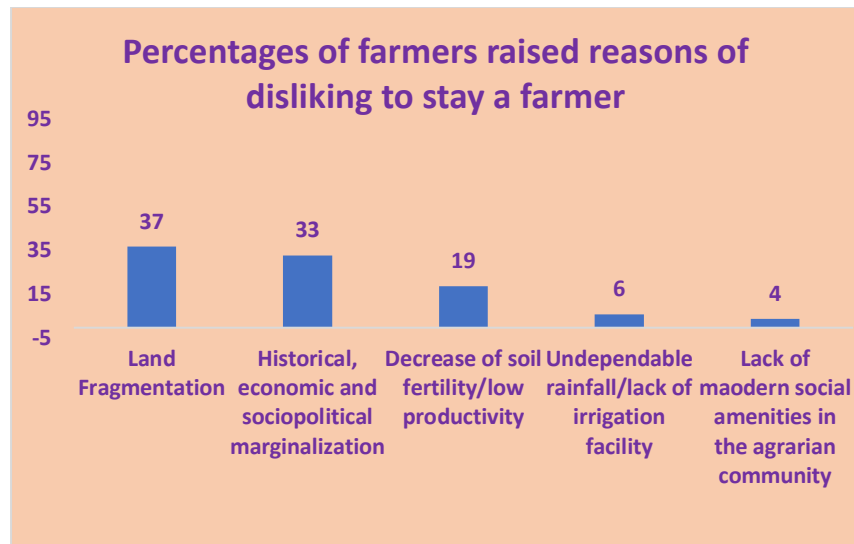


4.5 Farmers' View Towards Agriculture

Interestingly all the sampled HHs of this study do not want remain a farmer and do not enjoy agriculture. It makes sense to quit the industry if it does not pay back a rewarding net benefit and brings no significant change in the lives of the people running it. Even though the income of the people get from agriculture in a year is improving from time, there are other factors that disgust farmers not to remaining in agriculture and make enjoyment out of it. Excitingly, none of the respondents was happy to remain a farmer. Findings from this study show 37% of HHs interviewed said that they are not happy in agriculture because of land fragmentation – continued division and re-division of parcel among the growing population (children) in the HHs

leaves them with very small per capita land holdings. Apart from economic/monetary disadvantages, farmers pointed other psychological reasons for not staying in agriculture – historical and socio-political marginalization of the farming communities (33%). When probed further, they substantiated their argument by raising points such as, farmers do not have big markets, priority in electricity, health facility, clean and taped water, etc. is given to the towns, the farming community in their history did not get priority for roads, schools, financial/banking services. There for, it is a common practice in the community for farmers to move from the farming business when their living standards get a little better to move from the rural areas to the urban centres in search of these facilities. Decrease in soil fertility/low agricultural productivity due to continued use and lack of irrigation facility (19%), steadily declining/unpredictable rain fall (6%) and lack of modern social amenities in the agrarian communities are reasons that farmers are not happy.

Figure 14: Reasons of disliking agriculture by farmers



Although these physical variables and psychological connotation, group discussions on the other hand considered agriculture as a remunerative sector of investment. They saw the profitability of investment in agriculture in two ways: Direct and Indirect. Directly for their context, investing in agriculture changes the life of the whole community as agriculture is the mainstay of the people. It changes the food, the income, the health, the status, of the HHs. Agricultural investment profoundly outweighs other areas in their case, as they incur no cost for land and external labour (in most cases). Indirectly agricultural investment has a multiplier effect in other

sectors: the more they invested on agriculture the more capable they will be to invest on their children's education, the more purchasing power they will have to get industrial products, and eventually investing in agriculture spills over the larger population as agriculture supports the lion share of the population.

KIIs noted the following:

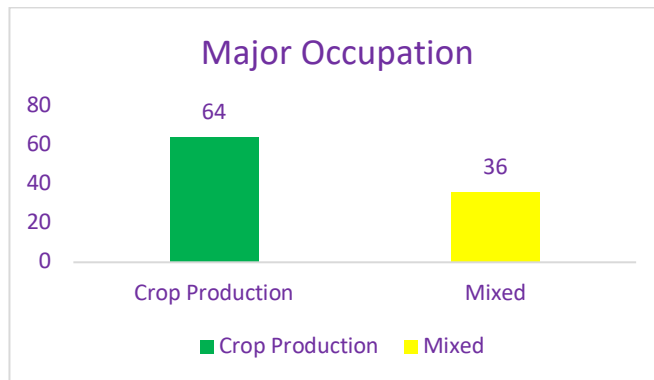
- Investment in agriculture is literally investing in rural people. Everything of poverty is confined in rural areas. Hence, investing in agriculture is much likely to lift majority of the rural population out of poverty much significantly than investing in other sectors which usually have a little significance in impacting the rural population;
- The return of agricultural investment is rapid and the initial/start-up cost is minimal compared to other manufacturing sectors in the account of the smallholders – even the by-products of engagement in agriculture are recycled and are of multiple importance;
- Prioritizing agricultural investment is of compound benefit as investing in the agricultural development is directly/indirectly investing in the lives of the majority of the rural population – that touches the larger chunk of the population and have a multiplier effect on the other sectors.

4.6 Major Occupation in the community

It is impossible to clearly demarcate the farmers' specialized engagement in a particular occupation in this community as everyone has more than one means of making a livelihood. Farmers in the community mainly practice a mixed farming technique of crop production and animal rearing. These practices support each other and mutually beneficial. Animals are sources of significant portion of the HH income and use as a saving stock for an unexpected future expenses. In addition, they support the cropping fields being source of organic fertilizer droppings and help as a source of nutritional improvement, as they are major sources of protein, fat and energy food for the household. Crop production, on the other hand, is the other major occupation for many of HHs being a default means by which families sustain and thrive. Quantitatively, 64% of the HHs' major occupation is found to be crop production including cereal, vegetable and other roots and tuber crops. The remaining 36% of the

HHs have mixed farming of livestock and crop farming as their major source of occupation.

Figure 15: Major Occupations



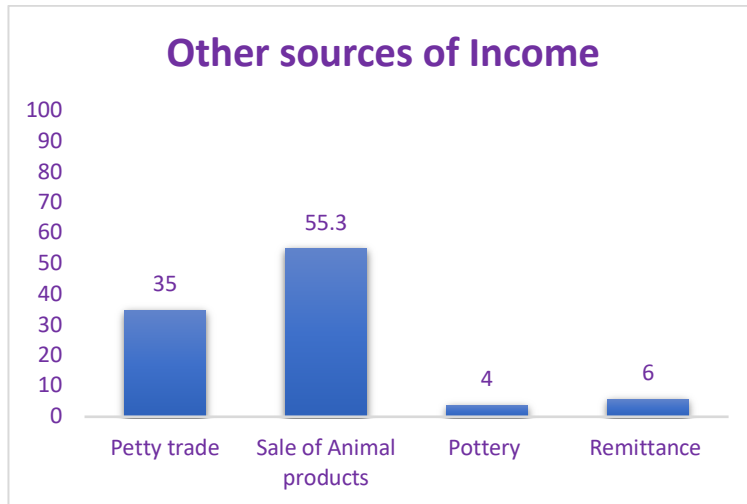
The community although mainly engaged in agriculture are not only dependent on agriculture. Majority of the respondents participate in agriculture and other allied activities such as, petty trades of grain, donkey pulled carts, livestock trade, trade of animal products (butter, milk), embroidery, pottery, carpenter and masonry works, liquor, etc. are among other alternative income sources in addition to the mainstay, agriculture. It is these allied activities of income that enable the community members to take part in traditional saving schemes like 'Iqub, Idir' for future uncertainties and annual festivities.

Historically and culturally, there is marginalization and underestimation of certain groups in the community based on their peculiar occupation (occupational marginalization). For example, potters, tanners and weavers do not have equal recognition and respect as the other dominant groups have in the community. Thus, because of their occupation, these groups become invisible and harder to be reached by commonly 'blind' development interventions in the rural communities. It needs an affirmative/reservational type of intervention while implementing rural development initiatives in the setting. Concerning the irrigation project which is being launched in the community, it is not only the issue of macro-members in the village that must be considered in depth, but it is the other invisible members who often are overlooked by development interventions. Members who in average have 1.5 – 2 hectares of land will directly benefit from implementation of the irrigation scheme. However, others who are not in that micro water shed area must be targeted for other allied activities

(product marketing, value addition, input supply, post-harvest handling/storage, and etc.).

Other micro sources of incomes mainly occupied by women and the youth are not usually recognized and kept track of by the mainline economic counting techniques that many of the productive activities near home and local markets are buried underneath the surface view. Petty trade activities mainly play significant role in making ends meet in the households of low income countries. 35% of the sampled households replied that they are engaged in any of the Income Generating Activities in the households.

Figure 16: Other Sources of Income



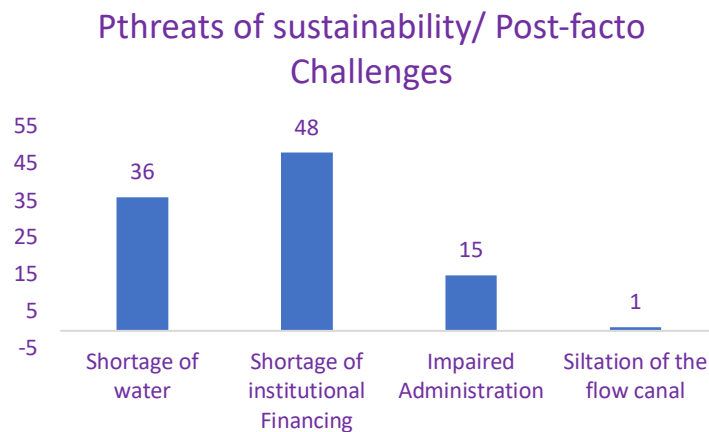
4.7 Threats of Sustainability/Post-facto Challenges of the Irrigation Schemes (reasonable perceptions)

In terms of sustainability, it is not only the completion of the construction of irrigation schemes that matters the most in the trends of small-scaled irrigation projects. It is the lasting benefit the scheme provides to the farming community that makes the difference. From the experience of development projects elsewhere, it often times is the episodic stimuli that the government and the donor community react and disappear without the legacy of their interventions and lofty engagements. The missing link that many a projects are victims of critique after the fact is lack of long lasting, orchestrated and ongoing management and pursued benefit it accrues to the targeted beneficiaries. There was one small scaled irrigation project implemented on the same river but at a bit upper site in the same Kebele administration before some 5-6 years.

That project was witnessed for its positive impact in its initial stages of production as the target farmers were able to produce vegetables, cereals, and other roots and tuber crops for 2-3 times in a year. Sadly, there were no strong and abled administrative WUAs that time and the financial sustainability was not thoroughly thought over. The former irrigation canal constructed by the government in collaboration with some other local NGO is not concrete lined except the division boxes that it suffered from water infiltration in the way to irrigated fields. Fearing these and other potential threats of after the event/post-facto, sampled households were asked to share their perceptions concerning the major challenges that are likely to happen in the course of the benefit. The interview extracted critical challenges such as, maintenance cost, managerial inefficiency and potential conflict, shortage of water flow, siltation of the canal as immediate challenges to encounter.

From the independent household interviews, it was found that 48% of the respondents posed shortage of institutional financing, 36% said shortage of water, and 15% concerned the problem of administration/ managerial impairment.

Figure 17: Threats of Sustainability



As per the findings and group consensus of the sampled households and FGDs, for every project to be sustainable, it must be rewarding and the return has to be significant and clearly visible. For so doing, there has to be strong, effective, executive and able WUAs, well organized and managed RUSACCOs to ease the credit facility at reach of farmers to easily afford for the agricultural input costs and finance the running/maintenance costs of the routine irrigation schemes. The marketing component of this engagement must be well thought of while launching irrigation

schemes since market can easily encourage/discourage farmers accordingly. Creating effective marketing linkage, considering both supply and demand sides of the spectrum to secure the availability of farm inputs at fair price and at the same time ensuring lubricated outlet markets by a competitively lucrative return.

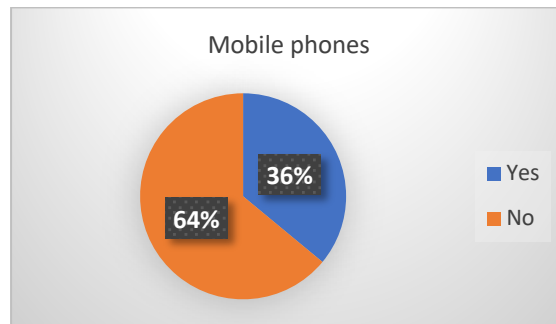
To assure sustainability of the scheme and thereby improve the overall livelihoods of the community, both IFAD and the GOVERNMENT are expected to capacitate and strengthen the WUA committee by training, and the Saving and Credit Cooperative by equipping materially and financially, at least at the initial stages. This can be done as a one-time injection of a lump sum of money after staffing, equipping and institutionalizing the operationalization of the RUSACCOs in the community. The fund, henceforth can be managed as a revolving while enculturating Participatory Monitoring, Evaluation and Learning throughout the program implementation and handing over the scheme after building active ownership in the benefiting community. Financial Sustainability has to be crafted through saving mobilization actively led by the RUSACCOs as it is frequently cited by many other former works, that country is left far behind even from other sub-Saharan African comparative countries in saving mobilization. The saving deposit in the Ethiopian institutional financial agents (Banks and other financial institutions) is only 22% of the national GDP (AEMFI 2010). This indicates that there is extremely limited initiative and achievement in the saving mobilization of the country. Thus, the general financial movement in the country is not institutionally formal, registered and automated; but it is informally hoarded in the hands of the informal money lenders. Thus, there is a huge potential of saving mobilization from and financial literacy campaign to the people as formal and regular saving channelled to the mainstream financial market capacitates the lending uptakes of the those institutions so as to open branches in the rural communities while increasing their loan portfolios.

4.8 Mobile Phones

The study area is not in such a remote location that significant number of participants own mobile phones which is not the common case in other nearby administrative zones and neighbouring kebeles in the region. The community where the study is conducted is located inside a radius of 10 KMs from the district town that they have a strong tie with the town. However, owners of these phones do not make use of them for financial transaction and banking but it is mostly used to talk to friends and other

information. Concerning the importance of mobile phones, all the respondents expressed they need mobile phones. The main reason for not having mobile phones is its cost. Some respondents of course, said they do not know how to operate it and they do not have electricity to charge it. As the study finding shows, 36% of the sampled HHs have basic mobile phones that calls and text message services whereas 64% of the sample does not have mobile phones in the community.

Figure 18: Usage of Mobile Phones

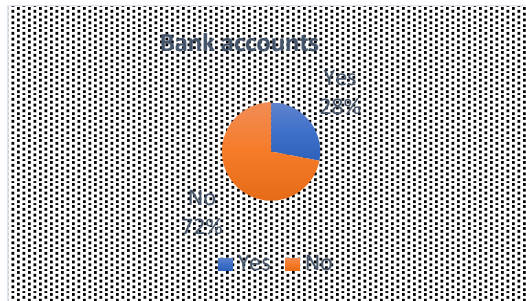


Source: Survey

4.9 Bank Accounts

The only financial/banking institution in Ofa District is the government owned Commercial Bank of Ethiopia located ten KMs away from the community where this research is conducted. As the bank in its service is not farmer friendly that it has no room to lend smallholders, majority of farmers (if not trader-farmer), do not have bank accounts. The main reason for not having bank account farmers raise is they do not have asset in cash to save in a bank. Some farmers who switch between farming and rural entrepreneur and others who receive regular remittance have bank accounts to transfer, save, and receive money. However, the number of farmers in this community who have bank accounts is much higher than the national standard of Ethiopia. Thus, 28% of the respondent have their own bank accounts that can ease any potential financial transactions and payments of any type. Apart from lack of money for not having bank account, farmers pointed that there is no incentive to open and save in the bank as it does not lend them any amount for they do not meet the minimum collateral requirements of the commercial banks. This indicates that farmers borrow from informal money lenders and family members even if the cost of borrowing is high.

Figure 19: Trends of Bank Account

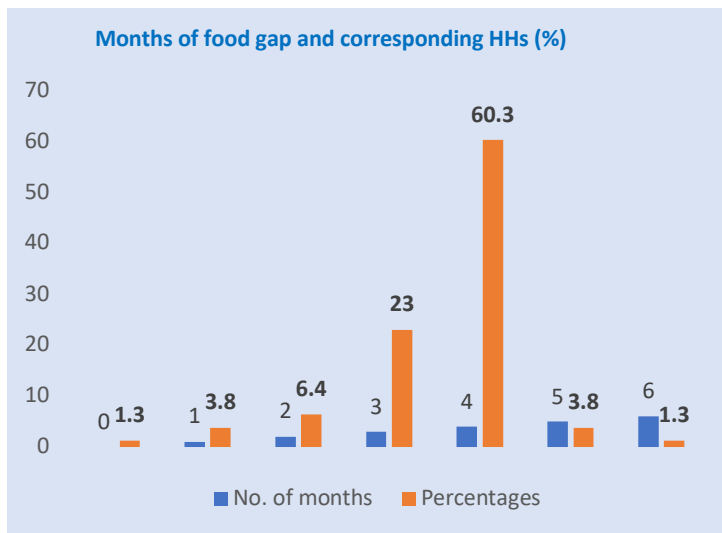


Source: survey

4.10 Months of food gap

Sampled farmers in the community as a whole experience a food gap in a year due to unreliable rainfall/lack of irrigation facilities, fragmented land holdings (population growth). The number of food gap months in the sampled HHs have a mean value of 4 months.

Figure 20: Months of Food Gap in a year



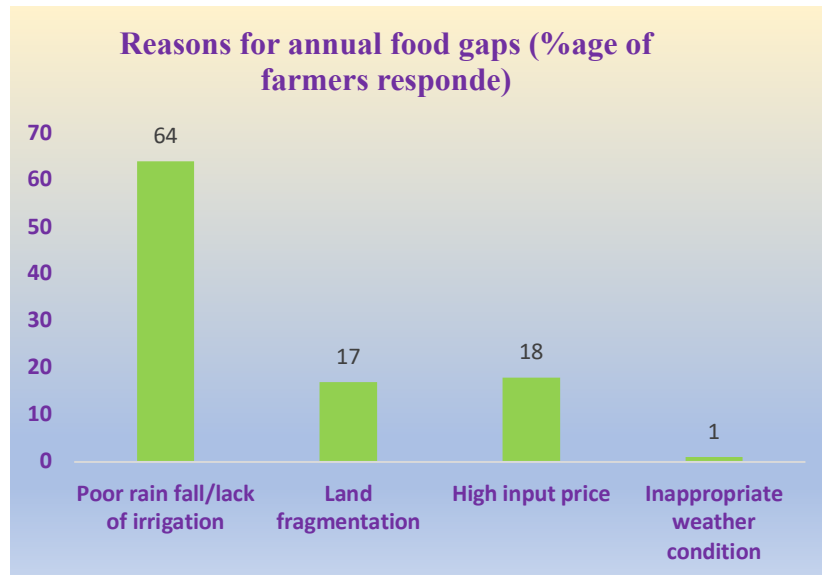
Source: the survey analysis

4.11 Reasons for extended food gap

It is discomfoting to live in a situation of the household having no food to eat and no other secured source of income to purchase for the course of half a year (4-5Months). There are only two major growing seasons of natural rain fall, which sometimes fail because of too much rain (water logging and surface washing), too early (before land preparation), too late and no rain at all that results in debilitating effects and uncertainty of the harvest of the field. Continued land distribution among children results in land fragmentation and diminished per capita land holding – leading to

dismal production and harvest that do not last for more than 7-8 months for the HH's consumption. The average family size (7 +) of the community from the sample exceeds the country's and the region's average (6) that worsens/puts additional burden on the shoulder of food production. Even though it is impossible to increase the per capita land holding (horizontal expansion), it is proved to be possible to increase productivity by intensifying farming techniques through incorporation of fertilizers, improved and drought tolerant seeds, pest and disease control mechanisms (vertical increase). However, these stuffs are too costly and sometimes non-existent in the context of dispersed smallholders. In Ethiopia, it is only the government that monopolistically provides agricultural inputs only twice in a year, hence farmers do not have and choice to get it when they need it.

Figure 21: Reasons for annual food gap



Source: Survey analysis

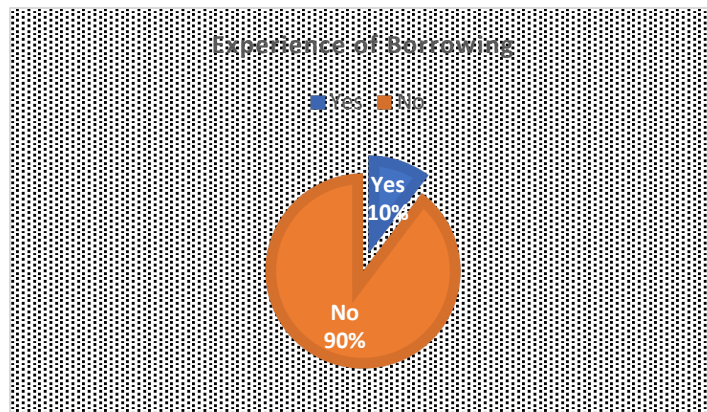
5.12 Engagement of Stallholders with Formal Financial Institutions

The significance of easy access to the financial institutions and the credit facilities for the productivity and income security for farming households cannot be exaggerated. Smallholder farmers have irregular cash flow trends (lumpy cash flows) that during the time of crop harvest and subsequent sale, they have relatively large sum of money and later on, especially during the time of input purchase and preparation, they face critical shortage of cash at hand. In order to adjust this lumpy cash flows of farmers, there needs to be universal literacy of financial management and promotion of saving culture based on this trend of farmers situation in cash flow mechanisms. In the attire

of the global market and the modern credit fuelled economy, it is impossible and unjust for farmers to depend solely on the finance coming out of their pocket to finance and invest on every activity that potentially will benefit their households.

However, farmers in Woshwocha Dekaya do not enjoy borrowing from financial institutions as there are no pro-agricultural lending institutions appropriate terms of payment. The financial institutions in the community are simply nominal with no organized offices and officers in the community. It is frequently raised in the HH interviews and FGDs that there are Saving and Credit Cooperatives, Women Self Help Groups and OMO MFI but it is only OMO MFI that actively involves in group lending – organizing peer groups of 5 members and lend a loan of one year bases. This loan initiative is often based on the business plan of groups mainly of-farm petty trade, Small and Micro Enterprises (SMEs) of small scale fattening, bee keeping and poultry production; but does not give loans for irrigation and purchase of agricultural input. Nonetheless, agricultural financing particularly irrigation infrastructures need a long-term loan. Though it is not for agricultural purpose, about 10% of interviewed HHs borrowed from the institutional finance in the last one year, and the remaining 90% did not borrow in the last one year (these may be either they did not borrow at all or borrowed from other informal financial sources of community money lenders, friends and relatives, and trade partners).

Figure 22: Experience of borrowing



Source: the Survey

There are a handful of financial institutions in the reach of the community though they do not have an active engagement in lending activities. The hierarchical structures of financial institutions in the country follow the government's administrative structures. However, running financial issues efficiently, effectively and securely needs other

infrastructural facilities that are generally missing in many/all rural areas at present scenario. Thus, the financial institutions in the Offa district of Woalita are all located in the district seat, Gassubba. There are only two MFIs operating in the district, OMO MFI and Vision Fund MFI. OMO is apparently government donated and owned institution in the SNNPRS that it has a magnificent penetration even to the remote structures of administrative but its lending is confined to an annual loan for rural and urban allied activities without a due consideration to the smallholder specific credit requirements (irrigation funding) that relative require a medium/long-term funding. Though it has loan agents in every kebele structure near farmers, these agents do not have a decision making role (even the applicants do not have that freedom) in deciding terms and specific areas of investment. Thus, it has a nominal office in the kebele with a loan agent facilitating group based loan service for other off-farm engagements (small scale beef production and poultry farming, if agriculture is considered).

Another MFI that recently opened its branch office in Gassubba, the district seat of Offa is Vision Fund Micro Financial Institution. Even though the institution had experience of lending to farmers in the past, it recently started to give loans to town residents apart from agricultural engagements. This MFI's interest rate is relatively higher than other financing institutions in the area (its annual interest rate is 24% of the principal).

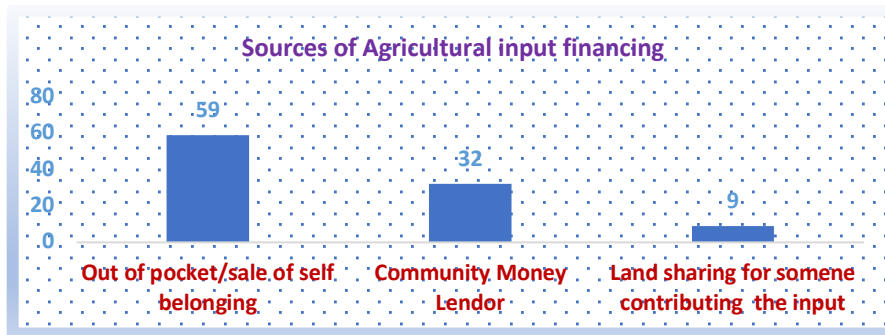
Other financial institutions (Dekaya Saving and Credit Cooperative, TDA women's SHG, and Kebele Women's Saving and Credit Cooperatives) are passive bodies for structural consumption. These institutions do not have any full-time employee and there is no regular saving and credit scheme even though they are legally registered by the government's cooperative agency.

Although farmers have awareness for the access of credit services mainly from OMO, their requirements before issuing credit such as, initial compulsory saving (20% of their credit plans must be deposited) , fixed repayment terms (usually one-time payment basis), lack of long term credit facility which farmers need the most, higher cost of borrowing (high interest rate), denial of special credit facility for agricultural loans for extraordinarily poor farmers, etc. are pushing farmers back from taking part in the service.

4.13 Agricultural input Financing in the community

Farmers in the study community do not borrow from any financial institution to finance and procure their agricultural inputs (fertilizer, improved seed, Irrigation facility). This is because the financial institutions located in towns are engaged in other small and microenterprises with less risk of delinquency. In this particular study, HH surveys, KIIs, and FGDs all indicated that there is no specific financial access to finance agricultural input costs and long-term agricultural investment loans in the region and the community too. The following display shows the respective percentage of farmers and financial sources to finance their agricultural input costs.

Figure 23: Sources of Agricultural Financing



Source: Survey analysed

4.14 Migration

Rural-Urban migration in the study area is astonishingly high. The case of one old man of the FGD member, may be approximately 75 sadly mentioned his case emotionally: today he and his old wife are living alone, children of them is around home at least to nurse and take care of them at their late age. His children are all around Addis Ababa, Hawassa, and other central areas of the country engaged in a daily labour – exposed mostly to unsafe working environments and under/no payments. They once in a year visit me in the new year festivity and leave after a week, he added. The other speaker in the FG could not control her tears while raising the case of her daughter because of migration: She left her school from grade 7 before two years and went to Moyale, south bordering city with Kenya. Working there for two years, she was robbed all her belongings and fell in traumatic stress, and still she is subconscious and bedded at home with no hope of healing. The aftermath of migration is devastating, especially for girls as they are subject of rape, unsafe sexual

objects for their bosses in the working environments, highly exposed to HIV/AIDS and other STDs, unwanted/unplanned pregnancies and complicated abortions.

The rate of migration, especially the youth in the last ten years is alarmingly increasing in the community. The reasons, as noted by the FGD included: lack/limitedness of employment opportunity, unpredictability/erraticism of rainfall – associated with missing irrigation facility, land fragmentation, lack of relevant credit facility lest they will invest on thriving agriculture, lack of post-agricultural rural enterprises and recreational services for the cropping youths.

Towards the solutions of curtailing Rural-Urban migration, FGs mentioned some pulling factors in urban areas as employment opportunity, smart mobile phones, jewelleryes (girls), fashion clothes, electricity and other modern social amenities at ease. The youth as mentioned in the FGD leave their place birth mainly because these links are missing in the community and the families cannot afford the respective needs of their children as the average family size of the sampled survey is 7 (larger than the regional and national index). The group members thoroughly analysed the kind of labour that their children are engaged in the places they migrated to, and identified mainly the following activities in their destination; hitherto these activities primordially existed since inhabitation: vegetable production in irrigated fields of Oromia regional state, daily labourer in floricultures of foreign investors in miles of KMs away the home, shoe making and consignment sales in towns, domestic workers and waiters in medium restaurants (mainly girls), and sadly street prostitutes in cities at night (teenager girls). Financing Small-scale irrigation schemes, as shown in the conceptual framework of this study and the relevant literatures contributes significantly to restrain these youth migration rates and employment creation in the reach and ensures the rate of schools enrolment and completion of students in the community. As a result, the FGD recommended some solutions to minimize (if possible to curtail) migration rates and its aftermaths; creating employment opportunity for the youths in their farms by accessing water for the year-round crop and vegetable production; facilitating an easy and simple to use credit facility for rural off-farm petty trade and sectors of their interest (taking into consideration the specific needs and planned participation of women/girls) – as there are encouraging beginnings in the micro financial industry that works affirmatively focusing on the women.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The concept and significance of food security is a front discourse of the contemporary/post-war academia and development implementers generally reaching to a conclusive remark of consensus that the comprehensive sum of food security is basically a subject matter of sustainable agricultural development and social/rural inclusion. Thus, there recorded are some unprecedented achievements since the Anthropocene in proportionately reducing the number of people in ardent poverty, especially since the beginning of the green revolution in the 1960's.

However, the absolute number of people who are stupendously impoverished and malnourished keeps growing astonishingly. This number resonates, in the global south, particularly in sub-Saharan Africa. This is backed up also by an unprecedented income disparities – some top, less than 5% of the world's population are stupendously rich but the lower, larger chunk of the population is horrendously poor (Rodney, W., 1974). It is this absolute number of people that we should worry about – it is a number of human hungry and necessitous. Of course, it needs a 'humane' mind to work for the inclusion of these millions of people that mainly reside in the rural southern hemisphere of the world – this is what the UN in one of its goals for 2030 works (leaving no one behind – the issue of inclusive social development).

Ethiopia is praised to register a consistent and perhaps a double digit economic growth rate for the last fifteen years consecutively and became the fastest growing economy in the world (World Bank 2017). This macroeconomic growth is mainly attributed to public investments in infrastructural development and executing mega projects. As per the requirement of the Maputo Declaration of 2003, requesting member states to at least allocate 10% of their national budget in 2015, the government of Ethiopia in 2008 achieved more than 12%; and in 2010, 17% of its budget was allocated to agricultural development (AEMFI 2010). However, the main focus of utilizing this budget is mainly towards building infrastructures, agricultural colleges, training agricultural mid-level professionals, and sometimes misguided agricultural input

distribution and rural financial intermediation ‘campaign – type’ implementation strategies. The aggregate witness of the Ethiopian economic growth is due to the government’s inflated public expenditure on infrastructures in the name of rural development – which in practice seems a business investment, characterizing itself to better off and potential areas, near main roads, and urban business centres.

As such, the smallholder farming still plays tremendous role in the Ethiopian economy mainly by being the mainstay of the rural population which covers more than 80% of the population. This sector creates job/employment opportunity for about 90% of this rural population, the lion share of the foreign exchange comes from this sector and it accounts for about 43% percent of the national GDP of the country. However, the smallholder subsector is suffering from myriads of challenges due to a practical neglect of the public finance to the sector, that in turn, restrained them from fully unleashing their potential to play the role expected thereof.

More than 90% of the cultivated fields in the Ethiopian agriculture is predominantly rain fed that it is unpredictable to forecast the next harvest in advance as the weather condition is changing unevenly. The vulnerability and heavy dependence of the Ethiopian economy on the rain fed agriculture, specifically of smallholders is exemplified in the fact that if the natural pattern of rain interrupts for as short as 3-5 months, the whole economy becomes in jeopardy, shacking, in turmoil and masses fall in need of food aid (this is live testimony of today). Heavy dependence on natural rain, lack of self-financing potential in the case of farmers, lack of farmer-friendly financial institutions in their reach, lack/less timeliness and unaffordability of agricultural inputs and their prices, lack/limited availability of support infrastructures (feeder roads, electricity, markets, etc.) are the most cited problems and challenges smallholders face in the study area day in and day out.

Despite the mushrooming growth of the MFIs in Ethiopia since 1996 (AEMFI 2010) in an unprecedented manner in Africa, studies confirm that the coverage of their service is still less than 10% of the credit need of the population in the country. The distribution of those formal financial institutions (Commercial banks and other MFIs) in Ethiopia are skewed towards main cities of modern facilities such as, roads, electricity, political and regulatory security, and limited risk of delinquency. This

proves that the phrase commonly promoted by the professionals of microfinance, “... *Financial Institutions are not only town based, they are also town biased.*” They indeed prioritize business engagements and loan granting for businesses and economically better of clients near towns, mainly town enterprises and short-term loans. RUSACCOs in the study area are not actively involved in the financial market but they are rudimentarily existent for structural consumption; there are women’s Saving and Credit Cooperative, Women’s Self Help Groups, Dekaya Saving and Credit Cooperative, etc. but they are not staffed by a full time employee, capacitated by training and material.

Risk aversion/diversion/spreading mechanisms in business environments are the missing links here, for example the crop insurance. The issue of crop insurance is totally new concept in the study area though there is frequent importation of new crop varieties released from the research centres to farmers that sometimes fail due to reasons (drought, pests, etc.). Apart from the dismal provision of replacement seeds of any kind irrespective of the type the failed crop, the issue of insurance is not thought of in the smallholder enterprise. In the area, farmers are given chemical fertilizers and improved seeds – by the government, sometimes compulsively at a pre-decided price in which farmers have no say at all. However, farmers are compelled to pay back the price with the accrued interest - not even considering the productivity/failure of the crop. This is unjust in dry land/non-irrigated fields where the natural rain is quite becoming unpredictable and climate variability is formidable.

As findings from this study - mainly the expert interviews depict, there is no significant step taken by the government to ensure/compensate market failures and precaution towards perils that sometimes result in total loss. The experts recommended the government to facilitate the start of risk minimization strategies, for example, crop insurance before introducing new crop varieties. Agricultural product marketing is another challenge of farmers in the study area. They sell their farm products in an unorganized manner. Because of ‘*Information Asymmetry*’ and lack of bargaining power in the market, farmers are usually price takers. Even if there is a case in which farmers sell their products to nearby wholesalers, it is the wholesaler who decides the price in the market as the product is not graded, sorted, tagged and appear with no value addition. Sometimes if farmers transport to the larger regional

markets to fetch a reasonable price, the stringent standards and invisible merchant cartels in the market do not allow farmers to sell in these demanding markets (depriving new comers of a place).

5.2 Recommendation

Smallholder agriculture is the main contributor of income, food production and jobs in Africa. In spite of those identified roles of the sector in the lives and the livelihoods of the general people, it is the most disadvantaged subsector in Africa and faces undulating challenges including limited saving and credit access so as to invest in their areas of interest to supplement the national economies. Based on the concrete findings of this study and other relevant literatures in the industry of financial remediation to smallholders, the following recommendations can be made:

5.2.1 Microfinance Institutions

Given the fact that agricultural lending is inherently risky enterprise and becomes more challenging when its engagement particularly becomes with smallholders having loose/no ties with buyers and produce low valued crops in their field. Smallholder farmers in the study community and elsewhere in the world are of greater heterogeneity in terms of their settlement, land ownership, cash flow patterns, areas of interest, etc. It is necessary to navigate the nitty-gritties of farming households including their variable traits so as to design relevant loan terms and risk minimizing techniques before approving/avoiding loans. This starts from recruiting a loan officer in the institution to give a due attention in the requirement of professional background of the officer in addition to the financial literacy in the profile. Almost all the loan officers of the financial institutions interviewed for this study have backgrounds of Accounting and Finance, Economics, Business Management and of little taste of social Science.

In order to design appropriate and sound policy of financial inclusion, especially addressing the rural poor, one has to have a first-hand knowledge and skill in the areas of general agriculture, rural development, and other allied rural enterprises. To decide on the terms of agricultural loan administration, the loan officers and the management has to have an awareness on the cash flows of the farming households, especially the smallholders who depend on natural rain. Thus, MFIs should follow flexible loan term and amount – it is not a one size fits all type of loan smallholders need, their cash flow

is heterogeneous, their income source and timing is diverse. Hence, MFIs need to adopt a loan mediator in the disbursement and decision of payment terms.

The MFIs in the area (OMO and Vision Fund) have a fixed loan term of one year maturity. But agricultural investment needs a bit longer term loan – giving borrowers a time for planting and production before the loan maturation time; for example, irrigation schemes. Most of the smallholders do not need a loan amount of at least 5,000.00 Ethiopian Birr which OMO lends to organized farmers in groups but farmers practically need small/larger amounts whenever need arises. Therefore, MFIs should seriously assess the need and paying potential of farmers by diversifying their loan portfolios, analysing the cash flow times of households, diversify risk management tactics rather than avoidance of the risk, employ specialized credit officers, incorporate technological advances rather than sticking to their traditional paper work of transaction (ATM, Mobile banking and use Point of sale machines, etc.).

The Commercial bank of Ethiopia, the biggest government owned bank in the country, particularly the nearest branch offices to every rural community does not have ears to hear the cries of the smallholders and eyes to see the level of poverty farmers experience daily. For this particular study, I entered to the building of the bank's branch office in Gessuba with a few questions to be reflected on, concerning the trend of the bank in lending to smallholders. The manager smiled and welcomed the researcher with apology that he was busy at the moment and they agreed to meet the next day. The researcher left his questionnaire with the manager hoping that he might have a time to look at it and give the researcher at least an in-depth opinion. In the next day, the researcher went to him, but he was amused by the interview that "Weather the bank grants loans to smallholders in their loan portfolio." He said: "How dare this bank lend poor farmers with no collateral of the bank's requirement? Rather than wasting your time, you had better go to other MFIs that lend those farmers." The researcher left that office with a 'long-face' hopelessly. It might not be the bank's priority to lend the smallholders given the current condition and setting of smallholders. But how can a human manager lack human heart to talk about the poor smallholders?

Of course, it is not profitable for the banks and financial institutions to grant loans to these scattered smallholders with illiquid collaterals and the prevalent risk associated with rain fed agriculture. The branch manager informed that the bank in some places

has an experience of lending potential and better off farming enterprises but it needs a security collateral, which in case of farmers is unlikely to be afforded. Banks and other financial institutions are pulled to towns and urban areas by modern infrastructures (electric power, clean tap water, all weather roads, regulatory and political securities, etc.) which are the missing links in the rural areas. If they jump into these challenging areas with their most liquid asset - cash, they will, indeed incur a loss and leave the market as there is no economies of scale in scattered financing and high transaction costs. (9205006260)

5.2.2 The Government, other Associations and the Donor Community

Financing smallholders is not only through financial institutions and cash alone. There are other infrastructures that help and catalyse the development of the rural community, pull factors of financial institutions (feeder roads, electricity, marketing linkages) and more community based semiformal financial institutions, for example RUSACCOs that are owned and managed by the free participation of the farming communities. In this study, one RUSACCO is interviewed that its loan portfolio is surprisingly farmer friendly, the term of payment, the amount of loan is flexible as far as the farmer is member of that cooperative. Thus, it is the government to facilitate the administrative and regulatory basis for easy penetration of Financial Institutions to the rural communities to increase their loan portfolio and serve the largest chunk of the society, the smallholder. Indirect rural investments (roads, power grids, the internet and telecommunications, legal and policy frameworks) are not remunerative to the private business companies because policy restrictions and nature of these enterprises associated with low purchasing power of the general population.

Risk minimization mechanisms, for example, 'crop insurance' is not heard of in majorities of the country's farming societies. On the contrary, crop loss due to various factors: drought, pests, diseases, product market failure, gap in input provision, etc. is prevalent in the country. This necessitates an intervention of policy incentive and institutional subsidy to minimize the uncertainties of the farming community through insurance packages and support prices. In the account of irrigated agriculture, farmers are supposed to produce throughout the year but the trend of input provision in the country as a whole/the study area is monopolistically executed by the government nationally programmed twice a year on the basis of the natural pattern of rainfall.

Thus, there has to be a package for crop insurance introduced, support for marketing linkage, breaking of the information asymmetry via organizing farmer groups (strengthening agricultural cooperatives) for product marketing, etc.

Associations mainly the Association of Ethiopian Micro Finance Institutions (AEMFI) should continue and strengthen the role it plays in organizing sessions for peer learning of MFIs in the country, experience sharing sessions from successful MFIs elsewhere (mainly that of in India the Latin American Countries that capitalized on agricultural financing and recorded a vibrant success stories). initiate and lead research works and publications in the industry, etc.

The Donor communities like IFAD as before should be seriously engaged in those good works of reaching the harder to reach community members by innovative direct financing mechanisms mainly through RUSACCOs in financing the smallholders. RUSACCOs in present scenario are mostly nominal structures in every lower, stratum of the government structure in the country that they are not actively engaged in any financial activities and do not have a fully employed officers across the board. If donors capacitate the local leaders of RUSACCOs rather than the traditional means of remediation through MFIs, participation of smallholders in the credit market will significantly increase.

5.3 Potential areas of Further Research

The study tried to cover only some of the broader and complex areas of financing smallholder farmers, through mainly focusing on Small-scale Irrigation; and its roles in ensuring food Security and improving the livelihoods. From its engagement with various stakeholders in the field (intense household interviews, community Focus Group Discussions, Expert Informant Interviews with (agricultural officers, Credit officers and bank managers, College Instructors, and Representatives of RUSACCOs) is able to identify the following specific areas for further investigation to build upon and enhance the existing knowledge base to bring forth effective financial remediation to the smallholders:

Including/lending to subsistent smallholders – Majorities of financial institutions today follow the '*quid pro quo*' – '*something for something*' to assure the payability of the loan. The present literatures focus on the criteria of viability that financial institutions need before issuing a loan. This makes only commercial or semi-commercial farmers benefit from the financial inclusion initiatives. Financial

institutions interviewed in this study do not grant a loan if there is no testimonial certificates from the local administration and human witness from the community – these leave the indigent members unserved at all. Thus, this overlooking of the subsistent poor in the community needs a further field analysis to realize a genuine remediation of the truly subsistent in financial inclusion.

Providing Medium/long-term finance to farmers: Structural transformation of the smallholder farming sector requires a planned investment on medium/long-term investment in fixed assets and engagement in cash crops having a relatively longer pay-back period. Small loan size and associated cost of transaction is frequently cited as a threat to financing smallholders. It, therefore, needs a further research in this area to identify why the financial institutions are reluctant to grant long-term credits, and search for lessons and experiences of others who pioneered in this issue to identify and adapt best practices for long-term credit facilities.

Introducing Crop Insurance/policy incentives and subsidies: It is paradoxical, given the risky nature of financing smallholder farmers, there is no a single remediation of smallholders by common insurance companies. For the expansion of lending to the smallholders, there needs to be an in depth policy reviews, documentation and dissemination of successful trends in risk protection (insurance) and intervention initiatives to take care of smallholders in cases of market failures and drought (subsidized Public food Distribution Systems and Minimum Support Prices, for example India).

Which one would be profitable and cost-effective to finance smallholders (directly or through third parties)?

Existing literature shows donors and governments finance smallholders through third parties (anchor firms) of MFIs, and government agencies. Further research in this area will contribute to our understanding in designing lasting models of lending and cost-effectivity of the conventional funding through firms and direct lending to farmer groups and individuals.

Environmental and Social Impacts: This study only investigated the ‘good’ of Small-scale irrigation. However, it is evident that there can be some ‘bad’ impacts of Irrigation schemes on the Natural Environment and the local people’s lives including ground water depletion, prevalence of water borne diseases, water logging, salinity,

peoples' displacement and potential conflicts. Thus, these possibly grey areas of enhancing irrigation schemes needs furtherly specific studies.

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Letter Attachments

1. Request from TERI - SAS

 **TERI School of
advanced studies**
(Deemed to be University)
(established under Section 3 of the UGC Act, 1956).
Accredited with grade 'A' by NAAC

TERI School of
Advanced Studies
10, Institutional Area
Vasant Kunj
New Delhi – 110 070

Tel. 7180 02222
Fax 2612 2874
India +91 • Delhi (0) 11

December 18, 2017

Prashant Kumar Singh, PhD
Assistant Professor
Department of Policy Studies
TERI SAS
prashant.singh@teriuniversity.ac.in

Subject: Request for Major Project

Dear Sir,

It is my pleasure to introduce TERI School of Advanced Studies as a leading academic institute imparting high quality education in the fields of Engineering, Science, Management and Policies.

TERI SAS's strength lies in its unique and exciting research and education programs directed towards enabling and fostering sustainable development. Each program is multidisciplinary, focusing on students gaining knowledge across a wide spectrum of subjects with emphasis on developing innovative solutions.

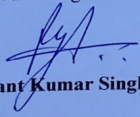
TERI SAS offers a MA (Sustainable Development Practice) program. As an essential component of curriculum, the students are required to work for their major project for about 4-6 months. Students are expected to submit a dissertation at the end of the internship and make a presentation, both of which are evaluated by a panel of faculty members and an external expert.

Aynalem Tadesse, one of our students of MA (SDP) of 2016-18 batches, is keen to work with your organization for his Major Project starting from January 2018. We would like him to be assigned a supervisor and a specific research problem for the project.

I will request you to kindly allow him for the same.

Looking for your confirmation.

With Warm Regards


Prashant Kumar Singh, PhD

2. Joining Letter from Ministry of Agriculture to TERI - SAS



በኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ
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Federal Democratic Republic of Ethiopia
MINISTRY OF AGRICULTURE AND NATURAL RESOURCES


ቁጥር No. 13/B/2018/13
ቀን Date 23/01/2018

To TERI School of Advanced Studies (TSoAS)
10, Institutional Area, Vasant Kunj
New Delhi – 110070

Subject: Joining Letter

As requested by your school, Mr. Aynalem Tadesse from the program of MA Sustainable Development Practice – MA SDP 2016/2018 joined our organization in this 22 January 2018 to conduct a research in our program, Participatory Small-scale Irrigation Development Program II (PASIDP II) co-funded by IFAD in the topic: 'Financing Smallholder Farmers in the context of Ethiopia.' Further more, we assure that our ministerial office will take care and play a facilitative role in his research work in the field and assign him a supervisor as per the request of your letter.

With Regards


Nuredin Asaro
National Participatory Small-Scale
Irrigation Development Programme
Coordinator



ፋክስ ቁጥር
Fax No 011646-20-03

☒ 62347


☎ 0116-46-32-02
0116-46-22-73

አባክዎን መልስ ሲሰጡ የደብዳቤያችንን
ቁጥር ይጥቀሱ

Website www.moa.gov.et
ኢትዮጵያ -አዲስ አበባ
Ethiopia-Addis Ababa

Please quote Our Ref.
when replying.

3. Letter from the Ministry of Agriculture to the SNNPR



በኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ
የእርሻና ተፈጥሮ ሀብት ሚኒስቴር
Federal Democratic Republic of Ethiopia
MINISTRY OF AGRICULTURE AND NATURAL RESOURCES


*ጥር No. 13/0120/117
*ገ Date 15/05/2010

በደቡብ ብ/ብ/ሕ/ ብሔራዊ ክልላዊ መንግስት እርሻና ተፈጥሮ ሀብት ልማት ቢሮ
ሀዋሳ

ጉዳዩ:- ትብብር ስለመጠየቅ፤

በህንድ "TERI Scholl of Advanced Studies" የሁለተኛ ዲግሪ የሚማሩት አቶ አይናለም ታደሰ ለጥናት ዓለም አቀፍ የግብርና ልማት ፈንድ (IFAD) ለተማሪዎች የመደበውን ፈንድ ተወዳድረው በማግኘታቸው በሀገራችን በ"IFAD" በሚደገፉ አካባቢዎች ችግር ፈች ጥናት እንዲያካሂዱ ከላይ ከተጠቀሰው የትምህርት ተቋም ተልክዋል።

ስለዚህ በክልሉ በወላይታ ዞን በ"IFAD" የሚደገፍ ፕሮጀክት ላይ ጥናታቸውን እንዲያደርጉ ወደ ክልሉ የመጡ ስለሆነ አስፈላጊው ትብብር ይደረግላቸው ዘንድ በአክብሮት እንጠይቃለን።



ከሰላምታ ጋር
 ተረዲን አሳር
 የተሳትፎአዊ አካላት መስፍን ልማት
 ፕሮግራም ብሔራዊ አስተባባሪ

ግልባጭ፤

> ለክልሉ ተሳትፎአዊ አካላት መስፍን ልማት ፕሮግራም አስተባባሪ ጽ/ቤት
ሀዋሳ

ፋክስ *ጥር
Fax No 011646-20-03

እባክዎን መልስ ሲሰጡ የደብዳቤያችንን *ጥር ይጥቀሱ

62347

Website www.moa.gov.et
ኢትዮጵያ -አዲስ አበባ
Ethiopia-Addis Ababa

☎ 0116-46-32-02
0116-46-22-73

Please quote Our Ref. when replying.

Scanned with CamScanner

4. Letter from Zonal Department to District Office, on my behalf



Tohossa DM/ Kawotetan Wolayitta Zooniya

በደቡብ/ባህላውረሰቦችና ሕዝቦች ክልል መንግሥት

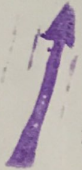
Goshshanne Dolla Mereta Dichchaa Kalenwan Dolla Mereta Dime Go'ettiyo Cittaa

በወላይታ ዞን ለርዥና ተፈጻሚነት የተፈጸመው የተፈጻሚነት ስልጠና

ቁጥር ክተ/ጭ/ወ/ደ-11/1302
ቀን 28/05/10

ለአፋ ወረዳ እርሻና ተፈ/ሀ/ል/ጽ/ቤት

ገሰባ!



ጉዳዩ :- ለጥናት መረጃ እንድትሰጡ ትብብርን ይመለከታል!

ከላይ በርዕሱ እንደተጠቀሰው ከክልሉ እርሻና ተፈ/ሀ/ል/ቢሮ በቁጥር 4014/ሠ-2/10 በቀን 21/5/10 ዓ.ም በተጻፈ ደብዳቤ ከፌደራል እርሻና ተፈጥሮ ሀብት ሚኒስትር በቁጥር 13/በ120/1/7 በቀን 15/5/2010 ዓ.ም በጻፈው ደብዳቤ በህንድ TERI Scholl of advanced studies 2ኛ ዲግሪ የሚማሩት አቶ አይናለም ታደሰ ለጥናት ዓለም አቀፍ የግብርና ልማት ፈንድ (IFAD) ለተማሪዎች የመደበውን ፈንድ ተወዳድሮ በማግኘታቸው በሀገራችን (IFAD) በሚደገፉ አካባቢዎች ችግር ፈቺ ጥናት እንዲያካሂዱ ወደ ክልላችን ተልክዋል።

ስለዚህ በዞናችን ውስጥ በአንድ ወረዳ በIFAD በሚደገፍ ኘሮጀክት ላይ ጥናታቸውን እንዲያደርጉ የተላኩ መሆኑ ታውቆ አስፈላጊው ትብብር እንዲደረግላቸው እናሳስባለን ።

ግልጻዎ !

- ⇒ ለመምሪያ ኃላፊ ቢሮ
- ⇒ ለተፈ/ሀ/ል/አጠ/ ዘርፍ
- ሶዶ!**



ከሠላምታ ጋር!!

ዳንኤል ዳሴ አሲቶ
Daniel Dalle Alito
የወላይታ ዞን ለርዥና ተፈጻሚነት የተፈጸመው የተፈጻሚነት ስልጠና

5. Support Letter to OMO MFI from district Head, on my behalf

