



**AN ASSESMENT ON SUSTAINABILITY OF AFAR IRRIGATION BASED
INTEGRATED AGRICULTURAL DEVELOPMENT PROGRAMS: THE
CASE OF SUPPORT FOR SUSTAINABLE DEVELOPMENT NGO**

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June, 2019

Addis Ababa, Ethiopia

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BY

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**A PROJECT WORK SUBMITTED TO ST. MARY'S UNIVERSITY
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Statement of Declaration

I, Bezawit Admassu declare that this research entitled — “Assessment on sustainability of Afar irrigation based integrated agricultural development programs: - A Case Study on Support for Sustainable Development NGO”; is the outcome of my own effort and study. All sources of materials used for the study have been duly acknowledged. This study has not been presented for a degree in any university.

Bezawit Admassu

Signature: _____

Date: _____

Letter of Certification

This is to certify that Bezawit Admassu has carried out this project work entitled “Assessment on sustainability of Afar irrigation based integrated agricultural development programs: - A Case Study on Support for Sustainable Development NGO;” is under my supervision.

This work is original and suitable for the submission in partial fulfillment of the requirement for the award of Master of Arts Degree in Project Management.

Advisor: Chalachow Getahun (PhD)

Signature: _____

Date: _____

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ABSTRACT

The small scale irrigation development programs which are implemented by the NGO Support For Sustainable Development is with an aim of helping marginalized community of the area in that they could generate their own income and will also reduce poverty and yet some of the projects implemented tend to stop functioning and are giving unsatisfactory results in terms of economic growth, social development and environmental development. Small scale irrigation projects are irrigation projects in which infrastructure are built for the society that are suitable for irrigating their lands in gaining water for their farm lands. The objective of the study was to assess the sustainability of irrigation based integrated projects implemented by Support for Sustainable development NGO. There are indications that projects implemented by the NGO tend to stop functioning and are giving unsatisfactory results in terms of economic growth, social development and environmental development. Both primary and secondary qualitative data were collected for the study from Support for Sustainable Development's directors, managers and officers at the head office level and the NGO's different documentations. The data collection techniques were through interview with key professionals of SSD's staffs and through reviewing different documents of SSD. The findings of the result reveal the positive influence that created on the marginalized community in the Afar region, the challenges that the project faced in implementing the project, and the numbered list of successful and unsuccessful projects implemented by SSD.

Key words: Sustainability, Small scale irrigation projects, NGO

LIST OF ABBREVIATIONS

GTC- General technical Cooperation

IFAD-International fund for Agriculture Development

NGO- Nongovernmental organization

SSD- Support for Sustainable Development

SSI- Small Scale Irrigation

WUA- Water User Association

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Sustainable development refers to development that meets the needs of the present without compromising the ability of the future generations to meet their own needs (Theis and Tomkin, 2015). There are three dimensions that sustainability seeks to integrate that are; economic, environmental and socio-political development (Theis, 2015). It had elaborated that;

- The economic interest defines the frame work for making decisions, the flow of financial capital and the facilitation of commerce, including the knowledge, skills, competencies and other attributes embodied in individuals that are relevant economic development.
- The environmental aspects recognize the diversity and interdependence within the living systems, the goods and services produced by the world ecosystems and the impacts of human wastes.
- The socio-political refers to interactions between institution/firms and people, functions expressive of human values, aspirations and wellbeing, ethical issues and decision making that depend up on collective action.

When projects are commenced different studies are necessary for making a project successful, productive, profitable and sustainable (Mastewal & Katherine, 2012). According to their study implementing small scale irrigation development programs which are devoted to change the livelihood of the marginalized community, the project should promote long term sustainability of the project. Different studies of making a project sustainable should be incurred in developing small scale integrated irrigation projects such as economic, social and environmental studies (Demissie, 2018). It illustrates that irrigation development programs enhance in each aspects of the study in that: in economic aspect, the project is aimed at creating of food security and self-sustained pastoralist communities of the communities which are affected by drought and poverty. In the social aspect of the project different stakeholders are involved in the implementation of irrigation projects including all the beneficiaries of the project, the firm/organization implementing the project, the government

agencies that are woredas and zones, etc. Considering the environmental aspects environmental changes that occur due to the construction of the irrigation infrastructure should be considered while commencing the project.

Small scale irrigation development projects has benefitted the participating farmers in better food security, improved livelihood, and higher diversity of crops, which in turn contributed to higher revenues(Mastewal, 2017).Understanding the challenges context for International Fund for Agriculture’s investment in small scale irrigation development in Ethiopia can provide the basis for improving the outcomes of SSI development in Ethiopia can provide the basis for improving the outcomes of small scale irrigation projects in reducing rural poverty and improving the lively hoods of poor women and men (Mastewal and Katherine, 2012). There is a need for sustainable agriculture in Ethiopia because the sustainability of agriculture affects other needs such as food security and water (Lee, 2018).

According to the study of Mastewal and Katherine (2012) the challenges in developing small scale irrigation development had been identified as infrastructure development, weak capacity building, study problems, structural problems, maintenance and operation problems by users, weak capacity and follow ups of Water User Associations, weak supervision system, marketing, length for decision making process for project approval and implementation, conflicts over budget use, ownership and accountability in extension systems, staff incentives, and political campaign work. As understanding the above challenges are essential for investing and implementing SSI projects further studies has to be explored in identifying the crucial problems why implemented projects are not sustainable and are not giving the intended output. Reasons for unsatisfactory results should be identified by assessing the implementation organization, the beneficiaries and other stakeholders who are involved in the implementation of such projects.

1.2 Statement of the problem

The small scale irrigation development programs which are implemented by the NGO Support For Sustainable Development is with an aim of helping marginalized community of the area in that they could generate their own income and will also reduce poverty and yet some of the projects implemented tend to phase out and are giving unsatisfactory results in terms of economic growth, social development and environmental development. After the project is implemented including different practices mainly construction of irrigation

infrastructure and giving farmers training, the beneficiary communities stop implementing their work after the project has been handed over.

There are ample researches that had been done on irrigation project sustainability. Steps to develop sustainable agriculture in Ethiopia include training farmers in better agricultural practices, giving farmers improved seeds and holding activities to manage natural resources such as soil and water (Lee, 2018). According to the study of Asfaw and Gebremedhin (2015) the contribution of irrigation to the national economy as compared to its potentials is non-negligible which indicates more investments on the area have paramount importance for the development of the country therefore, intensive investments should be operated in the sector by governmental, non-governmental and private investors. Even though the above studies have been done there is no known assessment that has been done on implemented small scale irrigation projects whether they are giving the desired results or not, and why the beneficiaries of the project are not doing the required work after the project has phased out. As it had been discussed above sustainability should be applied for all projects, specifically in projects that had been implemented by SSD aiming to benefit the marginalized community of our country sustainability should be addressed. Reasons of why small scale irrigation programs are not sustainable and are not providing satisfactory results should be known and should be given a lot of emphasis because if the development programs are implemented and sustained well it will change the life of money as well as reduce poverty. It will be waste of investment if the projects are not giving the intended use.

The purpose of the study was to assess the sustainability of projects SSI projects that are implemented by SSD by identifying the reasons why the beneficiaries of the projects are not working as planned and are not using the project as per the intended amount that is not irrigating their land and giving the required results. For assessing the sustainability of the projects the following research questions had been developed.

1.3 Research questions

- How does the practice of SSD's small scale irrigation program benefit the livelihood of the marginalized communities economically socially and environmentally?
- What economical, social and environmental challenges occur after the SSI project has been commenced?

- Which SSI projects implemented by the SSD are being used by the community according to plan and which projects implemented by SSD are not giving the desired results?
- Why does the project implemented does not intend to give the planned results in terms of number of beneficiaries and area of cultivated land?

1.4 Objectives of the study

1.4.1 General Objective

- The general objective of the study was to assess the sustainability of irrigation based integrated projects implemented by Support for Sustainable Development NGO.

1.4.2 Specific Objective

- Identifying the economical, social and environmental benefits that the SSI has created on the communities where the projects have been commenced.
- Identifying the economical, social and environmental challenges that had occurred after the SSI project had been commenced
- Identifying which of the implemented SSI development program by SSD are giving the required service to the community and which of implemented SSI development program by SSD are not giving the required service to the community
- Identifying the reasons why implemented projects are not being used by the communities where the project have been commenced

1.5 Significance of the study

The research paper has great importance in assessing sustainability of SSI projects that had been implemented by SSD that had phased out and identifying the major reasons why irrigation development programs tend not to have satisfactory outputs and also tend to fail. In return after the draw backs of the projects are known the investment in such projects will reduce poverty as well as change to the economic growth of the country. The paper has much significance in providing insight for irrigation projects and other development programs. Since there are similar projects under construction and plans for the future, in a way, the research plays an important role for the project implementers (usually government and

NGOs) and other stakeholders. In addition it can be used as secondary data for further researchers regarding the subject matter and also for academic purpose.

1.6 Scope and Limitation of the Study

The scope of the study focused on the implemented small scale irrigation on Afar region. These projects are implemented by Support for Sustainable Development, which is a nongovernmental organization. The research aims to investigate the factors affecting the sustainability of the irrigation development projects.

The research has the following limitations:-

- The study is limited to irrigation development programs in Afar region only.
- The study limited to the identifying the reasons and factors influencing the sustainability of the irrigation development projects
- Literature on irrigation development program is limited.
- The duration of research study is from 2003 till 2019 implemented by Support for Sustainable Development.

1.7 Organization of the Study

This research project work has five chapters. The first chapter; deals with introduction, which incorporates, background of the study, statement of the problem, research questions, research objectives, scope of the study, limitation of the study, significance of the study, and organization of the study. The second chapter addresses the review of literature to the topic of the study. The third chapter deals with the research design and methodology, sources of data, target population and sampling technique, and tools of data collection and analysis. Under chapter four, result and discussions have been presented. Finally, chapter five contains conclusion and recommendations. In addition to this, there is a last part to present references interview questions and other relevant documents.

CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter presents the related literature review; it is organized in three sections. The first section presents theoretical review of related literature to the topic. The second section presents empirical literature review and the third section presents conceptual frame work of the study respectively.

2.1 Theoretical literature review

2.1.1 Project

According to Kerzner (2009), a project can be considered to be any series of activities and tasks that have a specific objective to be completed within certain specifications, have define start and end dates, have funding limits (if applicable), consume human and non-human resources (i.e. money, people, equipment), are multifunctional (i.e. cut across several functional lines).

According to PMI (2013), a project is a temporary endeavor undertaken to create a unique product, service, or result. According to Tayntor (2010), a project is a unique, finite set of multiple activities intended to accomplish a specific goal. On the other hand, Wysocki (2014), a project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specifications.

All of the above definitions have basic similarities, i.e. a project is temporary and unique activity and has clear goal or objective and specifications. To elaborate each point more, a temporary activity does not mean something accomplished within short period of time rather it means every project has a starting and ending period. To support this, PMI (2013) states that the temporary nature of projects indicates that a project has a defined beginning and end. Temporary does not necessarily mean the duration of the project is short. It refers to the project's engagement and its longevity. Similarly, Tayntor (2010), states that a project by definition has a beginning and a scheduled end.

2.1.2 Sustainability

Several authors and books have defined sustainability in a various ways. Summarizing those definitions, sustainability is: A process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations which is defined by World Commission on Environment and Development (1987).

According to Reinhard 2017 there are three important stages for projects in order to see how sustainability can fit in. The *ex post view*: before starting a new project, we should analyze the development path that led to our project, whether there were previous projects with results that are inputs for our new projects, political processes that form the opinion of our stakeholders, experiences and lessons learned collected during similar projects. The “*ab initio*” view on projects: in projects we need to consider sustainability from the beginning, applying sustainable practices, methods and tools, developing project objectives that cover sustainability and manage the project itself in a sustainable manner. The “*ex ante*” view on projects: sustainability does not end after the approval of the project’s deliverables. We need to aim at impact long-term outcomes and strategic benefits.

Sustainability is about integrating economic, environmental and social aspects, this element refers to the triple bottom line or three-P concept as stated by Elkington(1997) and acknowledged by Adams (2006) as the ‘three pillars’ of sustainability: Social, Environmental and Economic. The concept suggests that three dimensions are inter-related and therefore may influence each other in multiple ways.

Sustainable development is development which meets the needs of the present without the compromising the ability of the future generations to meet their own needs (World Commission on Environment and Development, 1987). In the extensive discussion of Holmberg (1992) and Reed (1997), use of the concept of sustainability had been a growing recognition of three especial aspects of sustainable development;

Economic: An economically sustainable system must be able to produce goods and services on counting basis, to maintain manageable levels of government and external debt and to avoid extreme sectoral imbalances which damage agricultural or industrial production.

Environmental: An environmentally sustainable system must maintain able resource base, avoiding over exploitation of renewable resource systems or environmental sink sections, and depleting non renewable sources only to the extent that investment is made in adequate substitutes.

Social: A socially sustainable system must achieve fairness in distribution and opportunity, adequate provision of social services including health and education, gender equity and political accountability and participation.

2.1.3 Nongovernmental organizations (NGOs): concepts, Issues and Functions

NGO has no commonly agreed upon definitions globally. NGOs in their broader definitions are "associations formed within civil society bringing together individuals who share common purpose" (Turner and Hulme, 1997). Others define non-governmental organizations (NGOs) as legally constituted organization created by natural or legal persons with no participation of any government. In the Ethiopian context, as defined by German technical Cooperation (GTZ (2001)), the term is broadly used to denote an organization that meets the following requirements:

- NGOs are voluntary in their genesis
- NGOs engage in relief service delivery, and advocacy or development activities
- NGOs are non profit or self serving organizations working to serve the disadvantaged groups of the society
- NGOs are non political context
- Legal status: any organization to be considered as NGO, it requires a legal status/registration. NGO refers to both indigenous and international nongovernmental organizations (GTZ, 2001).

NGOs can be differentiated by orientation or level of operation. Type of NGO by orientation include charitable (relief and welfare) and development (service, participatory and empowerment); and by level of operations include national and international NGOs. During the past two decades, non-governmental organizations (NGOs) working in development have increased their profiles at local, national and international levels, NGOs have come to be recognized as important actors on the landscape of development from the reconstruction efforts in different countries due to disasters and other causes to

international campaigns for aid and trade reform such as "Make Poverty History". NGOs tend to be best known for undertaking one or others of these two forms of activity; the delivery of basic services to people in need, and organizing policy advocacy and public campaigns for change. At the same time, NGOs have also become active in a wide range of other more specialized roles such as emergency response, democracy building, conflict resolution, human rights work, cultural preservation, environmental activism, and policy analysis and information provision.

Generation and functions of NGOs

A number of observers have pointed to a gradual shift in the activities of development by NOOs; from a welfare orientation to a more development approach. Korten (1987) refers to three generations of strategic orientations in the developing community: relief and welfare, local self-reliance, and sustainable systems of development.

Table 1: Three Generations of NGO Development Program Strategies

Characteristics	Generation		
	First	Second	Third
Defining features	Relief and welfare	Small scale, self reliant local development	Sustainable system development
Problem definitions	Shortage of goods and services	Local inertia	Institutional and policy constraints
Time frames	Immediate	Project life	Indefinite long term
Spatial scope	Individual or family	Neighborhood or village	Region or nation
Chief actors	NOOs	NOOs plus beneficiary organization	Public and private institutions
Development educations	Starving children	Community self help initiatives	Failures independent systems
Management orientation	Logistics management	Project management	Strategic management

Source: Korten (1987)

2.2 Empirical I literature review

This part of literature review discussed related articles and journals related to the topic under study. The essence of this part of the literature review was aimed at to find out the research gap that could be related to the inclusion or omission of certain independent variables, strength of the methodology that could be adopted or adapted, measure the conformance of disconfirmation of the findings of the study with other findings.

Similar to the case for sustainability, many and different definitions were given for project sustainability. Summarizing those definitions this research defines Project sustainability as: the goal of creating and successfully launching a project that is capable of continuing to generate benefits for an extended period of time (Malcom, 2019).

Authors emphasize sustainability in relation to the development of underdeveloped regions. For example, Barbier (1987) links sustainable development to ‘increasing the material standard of living of the poor at the “grassroots” level, which can be quantitatively measured in terms of increased food, real income, educational services, healthcare, sanitation and water supply, emergency stocks of food and cash, etc.’

Looking at sustainability from NGO point of view, it means continuing to perform and deliver project benefits to the primary target group after the funding from the donor terminate, which means to maintain and continue efforts after funding is over (Uspana, 2016).

Regarding to the related issues of sustaining benefits for community by NGOs intervention which is one area of focus by this paper, Agnes (2010) noted that benefit sustainability links with community participation, empowerment and ownership. In such scenario NGOs consider as facilitators of these processes, and through strategic alliances with other development actors, it is assumed that social interventions would or are likely to head towards sustainability. All threads of arguments put together reveal a number of dilemmas that are embedded in the processes that should lead to benefit sustainability. He mentioned as some local NGOs work against to the facilitators roles by strengthening social hierarchies and re-enforced a patron-client relationship and disempowering instead of empowering individuals to realize their potential. Hence, the group formation and economic empowerment process have leading role in realizing benefit sustainability in

the community which should be coupled with integration of local engagement with national systems to influence policy.

In 1987 the World Commission on Environment and Development sought to address the problem of conflicts between environment and development goals by formulating a definition of sustainable development. Sustainable development is development which meets the need of the present generation without compromising the ability of future generations, (World Commission on Environment and Development, 1987).

2.2.1 Small scale irrigation projects

Agriculture is predominantly rain fed that is farming practices rely on rain fall, and the country has experienced chronic food insecurity due to degradation of the natural resource base, poverty, weak institutions, low functioning markets, land tenure constraints, and inconsistent policies (Mastewal2012) . Ethiopia has abundant water resources that can increase agricultural productivity. In its development policies and strategies, the government of Ethiopia (GoE) has highlighted the importance of interventions in Agricultural water management for improving the food security of smallholders. However, water resources remain poorly developed (FAO 2005). Therefore, there is growing interest among the government, donors, and NGOs to expand irrigation in areas where there is good potential. Constraints related to planning, design, management, and maintenance of irrigation schemes have affected the success of small scale irrigation schemes. Therefore, finding ways to manage agricultural water in a sustainable and productive manner is an important strategy for addressing food insecurity and rural poverty in the country.

In the past, the construction of SSI structures in Ethiopia was a response to drought and crop failure. The definitions given to ‘modern small scale irrigation’ by farmers, extension personnel, and SSI project implementers translate to the construction of schemes by external bodies (government or NGOs) and include concrete river diversion structures, lined canals, introduced water lifting devices, and use of farm inputs. The ‘traditional SSI’ is defined as a SSI system developed by farmers and that has diversion structures and canals made from locally available materials such as soil and stones and a farming system with low use of farm inputs and low/or no use of modern technologies. The Participatory Small Scale Irrigation Development Program appraisal has used a more formal definition of “traditional SSI” by Ethiopian Water Resource Management

Proclamation Number 197/2000 as: “a peasant-managed irrigation system which uses water at the maximum rate of 1 lps/ha and land holding of not more than one ha per user” (IFAD 2007).

Investments in SSI are expected to strengthen the livelihoods of the rural poor in Ethiopia. While irrigation dates back several centuries in Ethiopia, ‘modern’ irrigation was started by the commercial irrigated sugar estate owners established in the early 1950s by the Imperial Government of Ethiopia and the Dutch company known as HVA-Ethiopia (FAO 2005). The Ministry of State Farms had control over all large-scale irrigation schemes during the “Derg” regime, and the potential contribution of small-scale irrigation to the country’s economic development was ignored. Both the imperial and Derg regimes emphasized commercial farming and production of industrial crops for agro-industry. This approach changed when the current ruling party put the development of small-scale irrigation schemes and improvement of farmer-managed traditional schemes at the forefront of its water development policy.

Gebremedhin and Peden (2002) argue that water development in previous regimes could have benefited from a pluralistic approach in which there was an active involvement of beneficiaries in the design, implementation and management of operational schemes. A study by Hanjra (2009) in SNNPR found that although irrigation contributes to poverty reduction, smallholders remain poor due to small land holdings, large family size, high dependence on agriculture, illiteracy, low education, poor health, poor access to infrastructure and markets, and low use of modern inputs such as fertilizer. The study also suggested that the poverty reducing impact of small scale irrigation is greater when human capital and rural markets are well developed.

2.2.2 Project sustainability

This section reviews literature on what others have established on the study of sustainability of NGOs, and works implemented by NGOs particularly development programs.

The combination of sustainability in project management is a field of study that is growing but is still in a beginning phase (Gareis, Heumann&Martinuzzi 2009).

Many studies have been conducted over the years about agriculture and sustainability. Among those, studies of John, Berhanu, Samuel and Simon (2001) studied the strategies

for sustainable development, which illustrates different perspective such as population growth, land redistribution and also indicated that using different livelihood different strategies favor different types of land management practices.

Another study regarding sustainability of NGOs by Gathe (2013) concluded that NGOs and the donor community are susceptible to any number of economic and political pressures occurring everywhere from the organizational level all the way up to macro variations in national and international economies, donors are subject to funding constraints of their own and are often beholden to boards, larger organizations, government ministries, or even national legislatures that can limit their capacity to fund purely based on the quality of a project or the good record of a grantee. It had explained that some donors can even fall victim to severely limiting budget constraints that threaten their very existence and suggested that NGOs must be aware of these possibilities and diversify their sources of funding accordingly. It had also suggested that NGOs must begin to develop at least some degree of self-sufficiency if they are to have any medium to long term plans and aspirations.

2.2.3 Irrigation Project sustainability

A study regarding sustainable irrigation have been made, which is improving sustainability of impacts of agricultural water management interventions in challenging context which has clarified the challenges that are common to all sites as infrastructure development, weak capacity building, study problems, SSI structural problems, political campaign work, lengthy decision-making processes for project approval and implementation, conflicts over budget use and weak supervision system. The study also identified the factors affecting SSI projects as lack of revision of unit rates, insufficient flexibility in technology choice, types of investments, insufficient attention to rehabilitation of SSI schemes, weak monitoring and evaluation (M & E) mechanisms and poor documentation. It had made recommendations for project identification, study and design, monitoring and evaluation, and for monitoring and evaluation.

Other study regarding irrigation has been studied by Mastewal yami (2017) which is improving the effectiveness of small scale irrigation in Ethiopia and findings have been drawn from the study. The findings of her study include: Small scale irrigation improves the livelihoods, Water shade management should be part of SSI project, improved value chains are necessary, increases access to improved seeds is a key, more women are

needed in WUAS to achieve equity, ongoing WUA training is crucial to SSI management, SSI projects should benefit both upstream and downstream users and making WUAs inclusive is important.

Another study carried out by Haile and Kassa (2015) indicated that Irrigation development is vital to the sustainable and reliable agricultural developments in Ethiopia. Subsistence dominated smallholder farmers' economy can be improved through the use of irrigation in the Ethiopian agriculture (MoA, 2011b). Similarly, making use of irrigation agriculture is going to be a means for increased agricultural production to meet the growing food demands of rapid population growth. Irrigation development in Ethiopia can be considered as a cornerstone of food security and poverty reduction tool as it has a power to stimulate economic growth and rural developments (Hagos et al., 2009). As a result, irrigation infrastructures are increasing year after year, which show countrywide positive development implications and experiences in small and large scale irrigation schemes. In Ethiopia, farm size per household is 0.5 ha and the irrigated land per households' ranges from 0.25 - 0.5 ha in the Ethiopian context (MoA, 2011). As a result, individual land holdings per households are too small to feed the household. With this limited landholdings, increasing food demands of the population depends on either one or a combination of increasing agricultural yield, increasing the area of arable land, and increasing cropping intensity by growing two or three crops per year using irrigation (MoA, 2011).

Nata et al. (2007), Abraham et al. (2011) listed out the benefits of irrigation that includes; increase food production in arid and semi-arid regions, enhances food production, promotes economic growth and sustainable development, create employment opportunities, and improve living conditions of small-scale farmers. As a result, irrigation contributes to poverty reduction and protects the environment from degradation and pollution. Furthermore, it increases subsurface water levels and recharges groundwater. As a result, small, medium and large scale irrigation infrastructure needs to be developed in the country. This helps to produce export commodities that would earn foreign exchanges and provides raw materials to the local industries. Since, most of the irrigation development in Ethiopia is expressed through an expansion of small-scale irrigations. Medium and large scale irrigation developments are needed to be taken into consideration.

2.3 Synthesis of the review

Even though the mentioned studies has positive impact on improving the sustainability of projects it is important to first find out the reason why projects that have been already implemented or that have phased out are not sustainable and have failed in giving the desired results.

This study had focused on the SSI projects that have been implemented by the NGO Support for Sustainable Development. It had reviewed both failed projects and successful project and had found out reasons why the projects had failed and also why the implemented projects fail to be sustainable as planned.

It is different from the above mentioned studies in that it had studied the stakeholders' view specially giving a lot of emphasis to the views of the beneficiaries of the project.

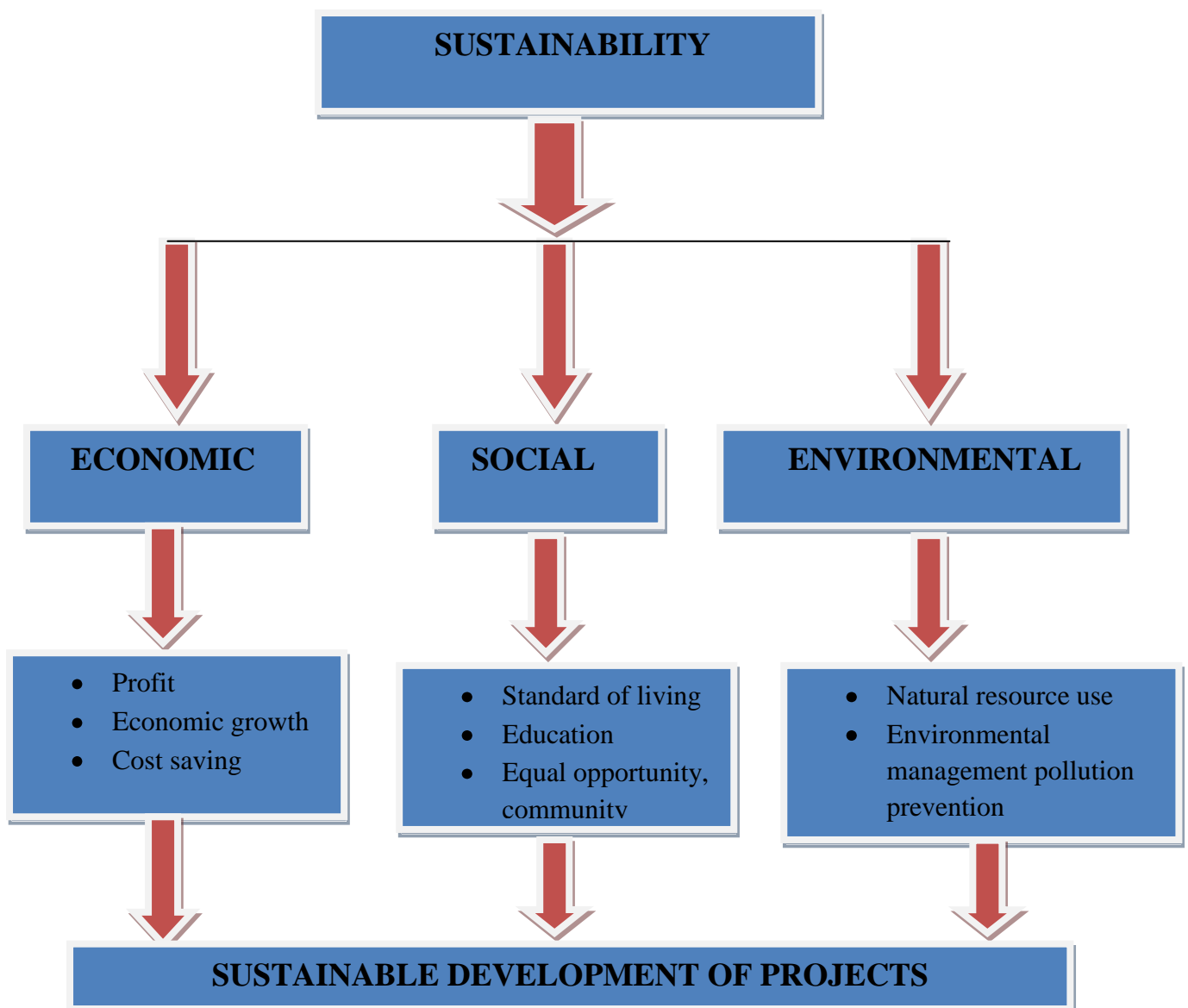
Despite the existence of NGO way back there have been little done of how they can be self-dependence without relying on donor funding a thing that result to their manipulation and when the funding is withdrawn this leads to their pull out and abandon their operations as they cannot sustain themselves on their own.

2.4 Conceptual frame work

A conceptual framework maps out the actions required in the course of undertaking the study. As McGaghie *et al.* (2001) put it: The conceptual framework “sets the stage” for the presentation of the particular research question that drives the investigation being reported based on the problem statement.

THE SUSTAINABILITY FRAME WORK

Fig - Conceptual Frame work



Source: Own source, according to the literature reviewed above the conceptual frame work had been developed.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Research approach

The approach that has been used for exploring the research was qualitative research approach which is used to gain understanding of underlying reasons, opinions, and motivations. It provides insights into the problem or helps to develop ideas or hypotheses for potential quantitative research.

3.2 Research design

The researcher tries exploring the reason why irrigation development programs implemented by Support for Sustainable Development NGO organization are not sustainable and failing at giving the required service to the community. The reason for using exploratory research was for understanding the target respondents' attitudes, opinion and behavior associated with the implementation of SSI development programs, which helps to understand the issue more thoroughly before attempting to quantify mass responses in statistical inferable data.

3.3 The research methods

3.3.1 Sampling size and sampling technique

3.3.1.1 Sampling technique

The technique had been used for the study was Non probability technique which is a method of sampling wherein, it is not known that which individual from the population will be selected as a sample. Since this research relies on the subjective judgment of the researcher had been selected in such a way that which individuals among the stakeholders will give the full information without hesitation and with much knowledge and experience about the SSI projects implemented by SSD.

The specific type of non-probability sampling technique that been used is convenience sampling where samples had been taken from the population that have been convenient to the researcher. This is because the population is too large to test and consider the

entire population and also because of its speed, effectiveness and ease of availability of the sample.

3.3.1.2 Sampling size

According to Neuman (2006), the question of how large a sample should depend on the kind of data analysis the researcher plans to use, how accurate the sample has to be for the researcher's purposes and the population characteristics. Hence sample of the study constituted employees that are senior staffs which have long time experience on different projects implemented by SSD and beneficiaries of the projects.

The researcher first listed the projects that have been implemented by SSD. The researcher has got information about the project which are successful and which have failed in giving the required results. Even if there are twenty projects that are implemented by the organization, criterion has been set for selecting the sample projects. The criterion is: since the research aims at exploring reasons of failures and giving the unsatisfactory results; the project that had been selected were from both the successful projects and from failed projects.

Accordingly, four projects were identified purposively with the above criteria in which the research finding is dependent on. Four projects had been selected purposively for the study in which two of the projects are successful where as the other two were selected from the failed projects. The reason for selecting only four projects that are implemented by SSD is that since projects are dispersed in the location of Afar region and are vast for addressing all of the projects that are implemented, the projects had been selected which are convenient to the researcher. The purpose of selecting the four projects is for the identifying the reasons of failed projects had stopped giving the intended results and for identifying the reasons of successful projects are giving the desired results with regards to sustainability.

Samples had been taken from the selected project's beneficiaries and employees of the SSD's organization. Because of the nature of the research, the whole employees and beneficiaries wouldn't be participant, and the sample population of the study comprised purposely selected target groups from the organization and beneficiaries of the projects. Finally, workers with experience and background with the implemented projects and beneficiaries of both failed and successful projects were considered as respondents to the study. From 43 employees that SSD has six senior staffs that have long time experience

and are experts in coordinating and supervising projects were purposively selected. The samples that are purposively selected from the beneficiaries of the four projects selected were four in number one from each project which are committees of the projects and are involved in the community and project interaction works. The reason for selecting only four participants from the beneficiaries is that the committees represent the beneficiaries of the projects and are interacted with the implementation of the project and they are trained and have learned about the project's purpose. They are the representatives of the community and know Amharic language that made it convenient for the researcher. Six employees had also been selected from the organization's staffs because they are the one who had been involved in the actual project implementation work, which four are coordinators of the project and the two were higher level supervisor in the SSD's head office.

3.3.2 Data source data collection instruments and procedures

The majority of data, which had been utilized for this particular study, is primary data which had been collected from stakeholders who are involved on the implementation of the projects and the beneficiaries of the SSI development projects. The reason for utilizing primary data is because of difficulty of finding secondary data on the study area. The reason for selecting stakeholders is in that: the cause root of the problem is found by listening the heartbeat of the stakeholders specially the beneficiaries of the project. Otherwise it is difficult to find appropriate information and responses. In addition to find good response as much as possible the researcher had collected the data from employees who have been working on the SSD's projects.

To gather data in relation to the study, the researcher had undertaken interview schedules with targeted population for this study. The respondents that were selected for the interview questions include the stakeholders that are involved in the implementation of the SSD's SSI project. The interview questions had been prepared into three main sections. The first section had prepared for the beneficiaries of the project, the second section had been prepared for the government bodies (woredas and zone administration), and the third section had been prepared for the SSD's organization staffs. Accordingly participants had been selected through each of the stakeholders and had been interviewed and data had been gathered.

The instrument used for gathering information was interview, which is an oral administration of questions which involves a face to face interaction. There are various advantages in using interview which are: more information will be collected in a greater depth, personal and supplementary information about the respondent's personal characteristics can be tracked easy through an interview. Interview had been conducted to the coordinators of the organization (Support for Sustainable Development), and to the beneficiaries of the projects of Subuli, Mile and Dalifage projects. The other instrument is document review from reports and recent background document of the organization.

The total population of the study had been taken from the stake holders of the SSI development programs implemented by Support for Sustainable Development NGO in Afar region from both failed projects and projects that are still giving the its intended use.

The sampling frame of the project are list of individuals who are the beneficiaries of the projects/ (communities in the area or pastoralist), and employees of the SSD who have experience in such projects.

The procedure that had been used is piloting which is the process of carrying out a preliminary study, going through the entire research procedure with a small sample. This is because piloting helps to identify practical problems of implementation.

3.3.3 Data analysis and techniques

The data analysis method that had been used is Narrative data analysis method which in the case of this study, it tells us the life experience of the Afar community where the SSI project have been implemented by Support For Sustainable Development NGO by comparing the livelihood before and after the project have been implemented. Narrative analysis use stories, journals, field notes letters, conversations, interviews and life experience as units of analysis to research and understand the way people create meaning in their lives (Clandinin and Conelly, 2009). The analysis of the research seeks to understand experiences, processes and contexts by literature review and experience survey.

For *review of review of literature*, the researcher had proceeded on taking the advantage of already implemented studies in that it saves cash, time and effort. This

kind of data that had been used had been obtained from organization's engaged in irrigation and agricultural projects, websites, and journals.

Experience Survey: The researcher had interviewed those individuals who know about the subject. The respondents that had been picked have been interviewed by the researcher. The objective of the survey was to obtain insight into the relationship between variables and new ideas relating to the research problem. The researcher had prepared an interview schedule for the systematic questioning of informants.

Sustainability had been measured in terms of economic, social and socio political developments in the region where the SSI development programs are implemented. The economic interest defines the frame work for making decisions, the flow of financial capital and the facilitation of commerce, including the knowledge, skills, competencies and other attributes embodied in individuals that are relevant economic development. Environmental aspects recognize the diversity and interdependence within the living systems, the goods and services produced by the world ecosystems. The socio-political refers to interactions between institution/firms and people, functions expressive of human values, aspirations and wellbeing, ethical issues and decision making that depend up on collective action.

The measurement level that had been used is nominal level of measurement in which where the variables with attributes have no ordering in there placement.

The technique that had been used was multivariate analysis because the variable that had been used for the study includes economic, social and socio-political developments of the region which is more than two.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction

This chapter explains the findings of the thesis based on the research questions. As discussed in the research design and methodology chapter, interview and document review were the qualitative data collection methods used in this study. The study tried to review different documents like monthly, quarterly and annual plan report, operational agreement of the NGO with the government, database of beneficiary's procedure manual, work order to cross check and validate the findings by using multiple sources and from the literature review.

The objective of this chapter is to provide the findings and results from the interview and focused group discussion by analyzing information obtained which were expected to achieve the research objective and obtain feed-back on the sustainability of Afar irrigation projects practices of SSD NGO.

4.2 Data description and Interpretation

This section deals with description and interpretation of data obtained from the research by taking major topics which are related with the objective of the study. It includes benefits of SSD's SSI development program, challenges of SSI projects after phasing out and reasons for projects' success and failure and perceived reasons for them with regards to sustainability.

The data had been gathered from respondents of SSD's employees and beneficiaries of SSI projects and also from document review. The respondents for the interview were from the staffs of the SSD and their position in the organization is both from head office and projects located on different areas on the Afar region that can provide important information regarding the projects sustainability of Afar irrigation based integrated agricultural development programs processes under study.

The other respondents that had been interviewed were the beneficiaries of the project on the Afar region. For the purpose of this study the projects that were selected were Subuli, Mile and Dalifage irrigation based integrated agricultural development program.

4.2.1 Benefits of SSD'S SSI development programs

4.2.1.1 Economical benefits of SSI projects of SSD

According to the SSD's staff respondents the economic benefits of the pastoralists due to the project intervention have been responded and are summarized as follows

- Livestock production was supplemented by crop production and the household food security was achieved.
- Asset building at household level was attained for the reasons that, they do not sale their animals to purchase food or any households need. In addition to that they also purchase additional animals they need either for production or fattening to get better market price.
- It had also been mentioned in that the economic influence measurement has different indicators such as months of adequate house hold provision, end use of cash, number of food groups, food expenditure share and so on. This makes it possible to measure the changes through time since the project is commenced.

According to the respondents of the Subuli projects of SSD, as the project was commenced the economical benefit that had created in the community is at first earning cash for labor rendered activities. Since the project employed the labors for construction of irrigation structures they clarified that they were able to participate in the construction process as well as earn cash that supports their families. After the project is implemented and starts functioning the government had distributed farm land in a fair way and they were able to generate crops and other grains either for their own feed or for sell, which either ways support the way of living.

4.2.1.2 Social benefits of SSI projects of SSD

The social influence of the projects had been analyzed through different points such as the government making favorable conditions for the projects, the existing policies and programs of the local and federal government, whether the community's felt needs had been studied, and in general what social difference it had created on the community.

The respondents of SSD's staffs view within the issue of government making favorable conditions for backing up NGO development program had been responded in such a way that the government has strong policy of promoting irrigation development to boost crop production for food security and export items. On the other hand, irrigation development also gives a chance not to depend on rain fed agriculture. Thus, the local or regional

government is also in favor of such development. With regard to Afar regional government, they contribute 30% of the total project cost for implementation of each irrigation project.

The view of the respondents of SSD's staffs the existing government policy at national and regional level is in favor of the organization's intervention. The government of Ethiopia is highly encouraging irrigation development which is one of the strategies that can bring sustainable agricultural production which can insure food security of the nation and also contribute a lot for export commodity production. In this regard, the regional government of Afar is attentively following up our work even after the project phases out.

The respondents had stated the role of the government in a way that the regional government is the main stakeholder and partner of each project. They had also explained their involvement starting from the stage of project identification, planning implementation and monitoring processes. The project handing over to the community is done at the presence of the government delegates, and they also take responsibility to follow up and technically support the community. After handing over the routine project management is done by the community leaders, but technically they are supported by the government as needed. They agreed on the point where the above points show evidence, as to how the projects are strongly backed and supported by the government.

The beneficiaries of the projects have as well responded the social influence that created on the community as for the Subuli projects was that at first understanding and willingness of the community was crucial. After the training discussions and negotiations with community leaders, the local woreda representatives and the elders, it came to an understanding that the project is commenced as the benefit of their own. Even in this project the area irrigated is more than planned due to high interest of the community. They explained that beyond the satisfaction of the project's result they believed in working to change has thoroughly opened their eyes and are thank full for not relying on only donations and pastoralist way of life.

4.2.1.3 Environmental benefits of SSI projects of SSD

The SSI projects that are implemented by SSD location as per the respondents of SSD's staff is on Afar region, where the area is hot and the people living in the area face draught. The respondents have mentioned the reason for selecting the area in that the

community of the Afar region is vulnerable to draught and other hazards. In Ethiopia pastoralist livelihood systems are becoming increasingly vulnerable to climate changes and environmental degradation. These are primary causes for draught and Afar region is one of the most affected areas in the country by natural hazard. These situations have made the lives of pastoralists miserable. Thus the purpose of developing irrigation schemes is to promote livelihood diversification of the pastoralists that is changing pastoralist to agro pastoralist. The agro pastoralists can cultivate land and produce crop and fulfill the house hold food security. It has also been an issue whether there was any influence from the donor side, and their response was in that the selection of development area and type of intervention is done by the organization community representative and the local government. The donors would like to see and understand the real problem of the area anticipated for intervention. Thus, the projects implemented are not donors driven.

According to the beneficiaries of the Subuli project the environment is hot and humid climate and there was no rain fall in the area, and since most of the people living in afar are pastoralist. They have clarified that living in such condition was very hard. They have elaborated that after the project have been implemented their lives have changed through experiencing greener land than of desert, and have seen considerable climate changes.

According to the document review on environmental sustainability the nature of SSD's project was that it aimed at protecting the natural environment and the irrigation system. It had mentioned that one therefore should not expect the project does harm in this regard.

4.2.2 Challenges of SSI projects after phasing out

4.2.2.1 Budget funding and economical challenges of SSI projects of SSD

The project funding challenge was that the project had faced according to the SSD's staff respondents is the issue of budget that is held for the implementation of the projects. As the 70% of the project's budget is from SSD's organization and the rest of the 30 % is from the government share. The problem that is faced is that the perception of the government body is the whole 100% of the budget had been taken care of by the donors. Through different negotiations understandings had been made to the government bodies that the 30 % of the support is on purpose that it will create sense of ownership to on the community where the projects are implemented. The other economical challenge that had

been mentioned is the raise of budget after the project had started. They had explained the reason it's because of the variation of material, labor and transportation cost of materials.

The views of the beneficiaries of the successful and unsuccessful project that had been mentioned are similar. The economical challenge that the community had faced is cash for work payment in that, the cash that had been paid for the labors was not similar to the one's living in the in the urban area. The other economical challenge that they had face is that the government support in grains had stopped since the project had been commenced.

The beneficiaries of the non-successful projects that are Mile and Dalifage specifically responded that the projects as they were commenced were that the community started earning cash for labor rendered activities. As the project was handed over at first the communities of the area started irrigating their lands according to the training they had been given. After a while the people stopped using the projects due to different reasons which is summarized as follows:

- The felt needs of the project were not mate in that the community wanted the head work infra-structure to be built at specific place where as it was constructed at different place so the people of the community were not willing to work due to nomad conflict and is still not functioning.
- The other reason for the Mile project to fail is in that after the project is commenced the river had changed its direction leaving the head work structure null of any river flow to be diverted through the canals.
- The community was not adapted to a way of living in work, that they were dependable on pastoralist way of living and income generation through donation
- The structures were not functioning due to silt had accumulated in the structures and there was no responsible person who were able to take action.

According to the document of the agricultural products from the irrigated farms are the foundations for the sustainability of the project as a whole. It elaborated that there is a market demand for the products and the beneficiary households are earning a lot of income. It had also mentioned that it will be worth while exploring the possibility of producing cash crops of better sale incomes with reasonable shelf lives

From the document analysis it had been stated that high rate inflation and escalation of prices both for material and workers had been a challenge.

4.2.2.2 Social challenges of SSI projects of SSD

The social challenge that mentioned from the interviews of SSD is in that the community's willingness to accept the project in that they have already adapted the pastoralist way of living; they never had experienced cash for work activities, so it was very hard at first to let the people adapt the situations. Poor working culture of the pastoralist community and slow adaptation of the new innovation by the community was difficult to accommodate such conditions in a project which has limited life span.

The social challenge from the perspective of the successful projects was that the new working environment was hard for them to adapt.

The beneficiaries of the Mile and Dalifage projects had responded the social challenge and has been summarized as follows

- Infrastructure had been discarded and there was no responsible person who had followed up the project.
- The desired needs of the community was not full filled
- Nomads conflict remained unsolved
- Acceptance of the projects by the community was very hard in that the project at first during the construction period had benefited the community in improving the lively hood of the community.

4.2.2.3 Environmental challenges of SSI projects of SSD

The interviewees of SSD staffs believe that the major challenges with regards implementing the project are the climatic condition of the area is very hostile; the temperature ranges between 40⁰-45⁰, unexpected flood damages of the irrigation structures.

The beneficiaries of the nonfunctional projects mention that the environment had changed as the project had started functioning. They mentioned that the project had given training and follow up programs so that the community learns how to irrigate their lands. Unfortunately after the projects are handed over through time everything changed in that situation became as they were before the commencement of the projects. One of the main reasons of the Mile project specifically as they had responded is that the river had

changed its direction due to natural causes and they had explained there were no responsible parties to take an action.

From the document analysis it had been stated that the project area is remote, arid and uncomfortable for project staffs. It had been mentioned that some staffs suffered not only from the hardships but also from malarial diseases.

4.2.3 Project success and failure and perceived reasons for them

The number of SSI projects that had been implemented so far by SSD and the planned results of the projects have been summarized as follows:

Table 2: List of projects implemented by SSD

No.	Project site	District	Ha	Beneficiary HHs	Total population	Project year	Fund agency
1	Aura I	Aura	250	750 HH		2003-2007	CFGB/CLWR
2	Aura II	“	150	450 HH	3150	2012-2015	CFGB/CLWR+ ANRS
3	Alele (Badule)	Uwa	160	450 HH	3150	2006-2009	CFGB/CLWR
4	Frenchfage	“	150	450 HH	3150	2009-2012	CFGB/CLWR
5	Mile	Mile	250	750HH	5250	2008-2010	CORD AID,ANRS & RAINBOW for the future
6	Dewe I	Dewe	50	150HH	1050	2008-2011	DF
7	Dewe II	Dewe	40	120HH	840	2012-2015	CARE
8	Telalak	Telalak	150	450HH	3150	2012-2015	DF
9	Aboncy	“	70	210 HH	1470	2013-2015	Rainbow for the future
10	Amuli I	Dalifage	100	300 HH	2100	2008-2010	CLWR/CFGB & ANRS
11	Amuli II	“	100	300 HH	2100	2013-2016	CLWR/CFGB & ANRS
12	Hanile	Dalifage	50	150HH	1050	2005-2007	ANRS
13	Abakebera	Hadel ‘ela	150	450 HH	3150	2008-2010	CLWR/CFGB & ANRS
14	Mengela	Semu-Robi	150	450 HH	3150	2010-2013	CLWR/CFGB & ANRS
15	Burtidas	Semu-Robi	70	210HH	1470	2013-2015	DF

16	Durufuli	Dulecha	70	210HH	1470	2010-2011	DF
17	Subuli	Gelaelo	150	300HH	2100	2016-2018	Menchin fur Menchen
18	Demale	Berehaile	160	480 HH	3360	2016-2019	CLWR/CFGB & ANRS
19		Chifra	200	600HH	4,200	2018 -2020	CLWR/CFGB & ANRS
20	Logia pump irrigation	Dubti	30	90HH	630	2004	WB/ANRS
	Total		2500	7320	51240		

Source: A document of SSD; A paradigm shift from relief to development (2018)

Out of the above listed projects the Logia pump irrigation, Mile project and the Hanile projects (Dalifage) had been nonfunctional projects according to the information gathered through interview of SSD's staffs.

The main perceived reasons among the respondents for the failed projects include: the community is not responsible for the infrastructures built by the project in that silt accumulates in the canal and disables the smooth water flow through the canals, the community willingness to work as for that of the Dalifage project and the environmental challenge as that of the Mile project where the diversion of the river flow due to natural causes and leaving the diversion structure free from river flow.

The researcher had not found any written document from the failures of the projects.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of findings

Based on the research questions the following findings have been obtained.

Identifying the benefits that the SSI has created on the communities where the projects have been commenced.

The benefits of SSD's project are summarized as follows:

- Livestock production was supplemented by crop production and the household food security was achieved.
- Asset building at household level was attained for the reasons that,
- The project had created in the community cash for work activities for labor rendered activities
- Irrigated farms are the foundation for the sustainability of the project as a whole.

The challenges of the SSI projects by SSD are summarized as follows:

- perception of the government bodies with issue of sharing 30% the budget
- the variation of material, labor and transportation cost of materials
- cash paid for labors was not similar to the one's working in urban area
- the government support in grains had stopped since the project had been commenced
- the community's willingness to accept the project
- Infrastructure had been discarded and there was no responsible person who had followed up the project.
- Nomads conflict

Lists of functional and nonfunctional small scale projects have been implemented by SSD

Reasons for the failures of the project had been summarized as follows:

- community not being responsible for the infrastructures built by the project
- the community willingness to work

- the diversion of the river flow due to natural causes and leaving the diversion structure free from river flow

5.2 Conclusion

This chapter presents the conclusion remarks for the major findings from the results and discussion chapter and important recommendations according to the main problems investigated in this study respectively. Based on results and discussions made in chapter four, this study tends to answer how the practice of small scale irrigation program benefit the livelihood of the marginalized communities with regards to sustainability and what challenges occur after the implementation of SSI project have been commenced . It also listed out the number of SSI projects implemented by SSD that are functional and non-functional in terms of their desired results and reasons why the project implemented does not give the intended results as per the plan of the projects with regards to sustainability.

In this study the sustainability of SSI projects implemented by SSD has been studied from the point of view of the respondent communities' changes in economic conditions, social change and environmental change that the organization had created on the marginalized communities of Afar. In this respect, the findings have identified first the benefits obtained by the community of Afar as livestock production was supplemented by crop production and the household food security was achieved, asset building at household level was attained and irrigated farms are the foundation for the sustainability of the project as a whole. The second finding are the challenges of SSI projects which are: perception of the government bodies with issue of sharing 30% the budget, the variation of material, labor and transportation cost of materials, cash paid for labors was not similar to the one's working in urban area, the government support in grains had stopped since the project had been commenced, the community's willingness to accept the project, infrastructure had been discarded and there was no responsible person who had followed up the project and nomads conflict. Thirdly factors for the failures are community not being responsible for the infrastructures built by the project, the community willingness to work and the diversion of the river flow due to natural causes and leaving the diversion structure free from river flow.

In general this research is based on a case study on Support for Sustainable Development NGO which implements small scale irrigation projects on marginalized communities on the Afar region. These findings have been obtained from the perspective of the stakeholders of the project. This had been done through interviewing the beneficiaries of the project and the staffs of SSD that have a long time experience. From the theoretical and empirical studies it had been found out that irrigation development is vital to sustainable and reliable agricultural development in Ethiopia. It had also been studied the effect of SSI projects, the challenges and so on. This research specifically studies why the projects of SSI projects fail or give unsatisfactory results by gathering data from the stakeholders of the project.

5.3 Recommendations

The findings of this research based on the opinions of the stakeholders involved in the SSI projects of SSD this research had been limited to irrigation projects implemented on Afar region. Major lessons drawn from this study were that in pursuing SSI community development sustainability of the projects should be prioritized during the project implantation and also after the project is handed over.

The following recommendations are forwarded in order to sustainable irrigation projects that supports the marginalized community of Afar region:

- Support and attention from government and concerned bodies must be addressed to such projects since it reduces poverty and improves livelihood of the community.
- Challenges that had occurred while implementing such projects must be given a long lasting solution for minimizing time for implementing the projects
- The required knowledge should be addressed to the communities of the Afar region so that initiation and willingness accepting the project will be resolved.
- Other humanitarian projects should also have an emphasis on what it must be done after a project is handed over.

This study tries to investigate the sustainability of SSI projects taking a case study in Support for Sustainable Development and strictly securitized other studies in the area in order to compare and contrast and add value on them if they exist. However no concrete study were done on of sustainability of humanitarian projects on SSI projects so far, hence the researcher

believes this study be a road show for further studies and recommends other researchers to carry out more descriptive investigations.

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APPENDICES

INTERVIEW

First and for most I like to thank you for your willingness to give respond to my questions. My name is Bezawit Admassu I am a Master of Art students in St. Mary's University School of graduates. For my project research work, I study **Assessment on sustainability of Afar irrigation based integrated agricultural development programs: - A Case Study on Support for Sustainable Development NGO**. Thus, I kindly request your response for the following questions.

APPENDICES

APPENDIX 1: KEY INFORMANTS INTERVIEW GUIDE FOR SSD'S SSI BENEFICIARY

1. Personal Information

Name of Respondent: _____

Region: _____

Age: __Sex: ____

2. What was the condition of the region before the project had been implemented?
3. Is there any fund aided programs that support the community?
4. If there are any other fund aided programs, in what way was the fund? To what extent does the support goes on? Was it continuous? For how long? Within what time gap? Was it enough?
5. Was there any generation of income other than fund aided programs?
6. If there mention the means of generating the income?
7. How does the practice of SSI project influence the lively hood of your community?
8. Do you believe that there was an economical change on the lively hood of your community? It is not yes or no question if yes why, if not why?
9. Do you believe that there was any social change on the lively hood of your community? It is not yes or no question if yes why, if not why?
10. Has the project created environmental change on region, if yes how did it create by comparing from the previous condition of the environment before the project has been implemented?
11. What challenges had occurred when the project started in you region?
12. Do you believe that challenges mentioned had been solved or reduced? If yes answer the next question if no move to question no 13
13. How did the community and the project overcome those challenges from your perspective?
14. What challenges had occurred after the project had been completed in your region?
15. Do you believe that challenges mentioned had been solved or reduced? If yes answer the next question if no move to question no 15, If no move to question 16
16. How did the community and the project overcome those challenges from your perspective?

17. What do you propose (in your opinion) for overcoming those challenges?
18. Is the project that had been implemented in your area functioning as planned? (based on the amount of land that is irrigated and the number of beneficiary households)
19. If no why? (What is the problem technical training, maintenance, Knowhow of the people)

APPENDIX 2: KEY INFORMANTS INTERVIEW GUIDE FOR SSD NGO STAFS

RESPONDENTS

1. Personal Information

Name of Respondent: _____

Age: __Sex: ____

Position in the Organization: _____

Year of service in the organization: _____

Major roles and duties in the organization: _____

Operational Areas: _____

Source of Fund: _____

Operational period of your organization in the target area: _____

Number of donors: _____

Annual Budget for specific year if available: _____

NGO's Thematic Areas and Interventions

1. In which areas of development your organization is working in the target area? Do you have prioritized sector thematic areas? If yes, why?
2. In which thematic areas your organization has been working for longer period of time? Why?
3. Is there any influence from donors side to give due emphasis on specific thematic areas? If yes, Why?
4. What are major difference does it create on the specific thematic area that you are working on?
5. Who are your organization target beneficiaries? Why?
6. What are the major challenges with respect to implementing the projects?

7. Are the project's that have been implemented so far with an aim of benefiting the community still functioning?
8. What do you propose for solving encountered problems and challenges in supporting small scale irrigation projects community development activities?
9. Do you think that government has favorable conditions for backing up of NGOs development programs and is recognizing the development programs as a benefit?
10. What do you think of the existing policies and programs of the local and federal government in line with programs that have been already commenced by your organization?
11. How do you monitor and evaluate the effectiveness and efficiency of your supports for the development projects that had been held so far at different levels?
12. What do you say about the role of government in backing up your efforts for making projects to be real factors of local development?
13. How do you ensure the sustainability and continuity of your interventions or activities in the community?
14. In your view, what are the indicators that helps to check whether sustainability is assured or not in the community?
15. How many of the project that have been completed are giving the intended use as per planned?
16. How many of the projects that have been completed are not giving the desired output?
17. What are the reasons for the projects for not the desired output?
18. Projects that are not giving the desired output have started at what time gap since the project has been completed?
19. Which body among the stakeholders do you think have the responsibility to ensure sustainability?
20. In your view, what are the indicators that helps to check whether sustainability is assured or not in the community?
21. Do you believe that community felt needs and problems are solved with your organization interventions?
22. What economical difference had the project commenced by the SSD had created on the community that had been observed by your region?

23. What social difference had the project commenced by the SSD had created on the community that had been observed by your region?
24. What environmental difference had the project commenced by the SSD had created on the community that had been observed by your region?
25. What are the major lessons your organization learn so far in its engagement with the small scale irrigation development programs held so far?

APPENDIX 3: CHECKLISTS FOR REVIEWING OF SECONDARY SOURCES IN SSD NGO

- Monthly, quarterly and annual plan and report
- Operational agreement of the NGO with government
- Success and cases stories developed
- Database of beneficiaries

