

Weldetsion, Goitom Gebreab (2023)

Eritrea's Self-reliance policy and the Road to Sustainable Food and Water Security

MPhil thesis. SOAS University of London

DOI: <https://doi.org/10.25501/SOAS.00040447>

<https://eprints.soas.ac.uk/40447>

Copyright © and Moral Rights for this thesis are retained by the author and/or other copyright owners.

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the copyright holder/s.

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the copyright holders.

When referring to this thesis, full bibliographic details including the author, title, awarding institution and date of the thesis must be given e.g. AUTHOR (year of submission) "Full thesis title", name of the School or Department, PhD Thesis, pagination.



Eritrea's Self-reliance policy and the Road to Sustainable Food and Water Security

Goitom Gebreab Weldetsion

A thesis submitted for the degree of MPhil in Developmental Economics

2023

Department of Economics

SOAS University of London

Eritrea's Self-reliance policy and the Road to Sustainable Food and Water Security

Abstract

Eritrea's models of self-reliance policy and its collective of governance strategy are exceptional which is not experienced in other African countries. The government strongly argues that development cannot be achieved through aid but can be attained through trade and investment from development partners (GebreMichael 2016).

As a new country when Eritrea achieved its independence in 1991, the government received a war-torn country with poor or nonexistent public service. All development programs started from scratch. However, in the past two decades, the government established substantial funds to build a network of dams throughout the country to reduce the dependence of rain-fed agricultural activities and practice modern agricultural techniques that can increase agricultural productivity and adopt a mechanism that can overcome the effect of climate change. To attain the desired food and water security in the past 30 years the government built 785 big and small dams (Ministry of Information 2021).

It is very hard for the Eritrean government to purchase the desired amount and type of food on need because of the sanctions so the only option of the government is to produce it through the implementing of the Self-reliance model and the collective governance model that engages different institutions in the process. Doing that a considerable progress has been attained on the reduction of poverty and increasing the agricultural productivity that ensured food and nutrition security. It is hard to achieve both food and nutrition security with the existence of food supply gaps that does not cause hunger. A report obtained from the Ministry of Finance and National Development (2021) indicated that “although comprehensive end data are unavailable the proportions of poor people and those suffering from food insecurity in the country are believed to have declined subsequently since independence 1991” (Ministry of Finance and National Development 2021:48)

Table of Contents

Abstract	2
List of Tables and Figures	6
List of Tables	6
List of Figures	6
List of Abbreviations	7
Acknowledgments	9
Chapter one.....	10
1 Introduction.....	10
1.1 Background	10
1.2 Overview of the Eritrean free choice policy and Aid tying policies of the West	12
1.2.1 Aid tying policy.....	12
1.2.2. Eritrean free choice policy	14
1.3 Stating the Research Problem.....	16
1.4 Significance of the Study	18
1.5 The Research Questions.....	20
1.6 Objectives of the Research	20
1.7 Limitations of the Study	21
1.8 Organization and Structure of the Dissertation.....	21
Chapter Two	24
Literature Review (Part 1).....	24
2.1 The State and Institutional Theory.....	24
2.2 The Role of State Institutions	26
2.3 The Collaborative Governance.....	29
2.4 Self-reliance.....	30
2.5 Assumptions of Self-reliance	31
2.6 Self-reliance in African Countries: The Case of Rwanda Tanzania.....	33
2.7. Foreign Aid	36
2.7.1 History of Foreign Aid	36
2.7.2 Effectiveness of foreign aid	38
2.8 Aid Dependency Theory	43
2.9 Agro-industrial Theory	46
Chapter Three	51
Literature Review (part 2).....	51
3.1 Introduction.....	51
3.2 Food Security	51
3.3Theories on Development and Food Security	53

3.4 Scientific Debate on Food Security	54
3.5 The Concepts of Food Security Sovereignty and the Nation-state.....	57
3.6 The Nation-state Food Regime	58
3.7 The Global Food Crises.....	60
3.8 Food Security Approaches/Models.....	62
3.9 Challenges of Food Security	64
3.10 Challenges of Food Security in Eritrea	66
3.11 Water Security	67
Chapter Four	70
The Research Method and Methodology	70
4.1 Introduction.....	70
4.2 Theoretical Conceptual Frameworks.....	70
4.3 Identifying the Bond Between the Eritrean Self-reliance Model and the Collaborative of Governance Model	72
4.4 Linking Philosophy to Research and My Ontological and Epistemological Position	74
4.5 Qualitative Research Methodology.....	76
4.6 Data analysis	78
4.7 Ethical Considerations.....	80
Chapter Five	81
Eritrea's Socio-economic and Political Context.....	81
5.1 Country background	81
5.2 The Population of Eritrea	83
5.3 Eritrean Climate and Topography.....	85
5.3.1 Rainfall in Eritrea	85
5.3.2 Climatic or Natural Hazards.....	87
5.4 Climate and rain-fed crop production in Eritrea	87
5.5 Agriculture in Eritrea	89
5.6 Historical Context of Modern Eritrea and Colonization.....	90
5.7 Self-reliance and the State Emergence.....	92
5.8 The Warsay-Yikalo Campaign of Nation Building Strategy	93
5.9 Eritrean and Ethiopian Border Conflict	95
5.10 The Background of the Sanction	97
Chapter Six.....	103
Eritrea's Collective of Governance and Self-reliance policy on food and water security.....	103
6.1 Economic Policy of Eritrea.....	103
6.2 Eritrea's Self-development Strategy	105
6.3 Developmental progress in Eritrea	107
6.4 E.P.L.F.'s Self-Reliance Policy on the Fields of Economics and Agriculture.....	110

6.5 Self-reliance as a Doctrine in the War for Independence	111
6.6 The Water Security Program in Eritrea.....	113
6.7 Socio-economic Contribution of the Sustainable Water Sufficiency.....	116
6.8 The Eritrean Self-reliance Model and the Collaborative of Governance Model on Food and Water Security	116
6.9 The Strategic Dams Which Are Constructed By Collective of Governance Of Self-reliance Model.....	119
6.10 The Process of Self-reliance Model of Eritrea on the Making of the Strategic Dams (The Process of Collaborative of Governance).....	126
6.10.1 The Starting Conditions	127
6.10.1.2 Incentive to participate.....	129
6.10.2. Facilitative Leadership	130
6.10.3 Institutional Design	131
6.10.4 The collaborative process.....	133
6.11 The outcome of the collaborative process of the self-reliance Policy.....	144
6.11.1 The Economic Contributions of the Projects Made Through Collective of Governance and Self-reliance Model.....	145
6.11.2 How Did the Developmental Projects Change the Quality of Life of the Local Communities?.....	150
6.11.3 The Sanction and its Effect on Eritrea's Development Programs.....	150
6.12 The building of Halhale and Azieb Agro-industries.....	155
6.13 The position of the Horn of Africa and Eritrea on food sufficiency.....	159
Chapter Seven.....	162
Conclusion, Implication, and Recommendations.....	162
7.1 Conclusion.....	162
7.2 Implications of the study	167
7.3 Recommendations.....	168
7.3.1 Suggestions for Further Research.....	169
References	171

List of Tables and Figures

List of Tables

Table 6.1	Eritrea's achievements in developmental progress	109
Table 6.2	The number of small medium and big dams constructed in different regions in Eritrea	118
Table 5.3	Strategic dams constructed after the independence of Eritrea	120
Table 6.4	The number of cash-generating fruit trees around the seven villages around the Logo Dams at the beginning of 2018	144

List of Figures

Figure 2.1	The concepts and assumptions of self-reliance	32
Figure 2.2	Global Hunger Distributions source FAO (2020)	65
Figure 4.1	A model of collaborative of Governance	73
Figure 5.1	geopolitical position of Eritrea	82
Figure 5.2	Eritrean populations on Composition by Age	84
Figure 5.3	The Six Administrative Zones of Eritrea	85
Figure 5.4	Mean annual rainfalls in Eritrea (1981-2010)	86
Figure 5.5	Annual rainfalls in Asmara (Central Highland Zone)	89
Figure 6.1	Distribution of water holding structure before independence (1991)	115
Figure 6.2	Distribution of water holding structure in 2001	115
Figure 6.3	the collaborative process of the self-reliance model	134

List of Abbreviations

AfDB	=	African Development Bank
AIDS	=	Acquired Immunodeficiency Syndrome
CIDA	=	International Development Agency of Canada
CIS	=	Commonwealth of Independent States
DAC	=	Development Assistance Committee
EDF	=	Eritrean Defence Force
EPLF	=	Eritrean People's Liberation Front
ERRC	=	Eritrean Relief and Refugee Commission
FAO	=	Food and Agriculture Organization
FOCAC	=	China-Africa Cooperation Forum
FS	=	Food Security
GDP	=	Gross Domestic Product
GM	=	Genetically Modified
GNP	=	Gross National Product
GoSE	=	Government of the State of Eritrea
HIV	=	Human Immunodeficiency Virus
IGAD	=	Intergovernmental Authority on Development
ILO	=	International Labour Organization
IMF	=	International Monetary Fund
LEISA	=	Low External Input and Sustainable Agriculture
MDGs	=	Millennium Development Goals

NGOs	=	Non-Governmental Organization
ODA	=	Official Development Assistance
ODA	=	British Overseas Development Administration
OECD	=	Organization Economic Cooperation and Development
PEPFAR	=	Presidential Emergency Plan For Aids Relief
PFDJ	=	Peoples Front for Democracy and Justice
R&D	=	Research and Development
RPF	=	Rwandan Patriotic Front
SDGs	=	Sustainable Development Goals
SIDA	=	International Development Agency of Sweden
SL	=	Sustainability of livelihood
SSA	=	Sub Sahara Africa
SWIFT	=	Society for Worldwide Interbank Financial Transactions
UK	=	United Kingdom
UN	=	United Nations
UNDP	=	United Nations Development Program
UNESCO	=	United Nations Educational, Scientific and Cultural Organization
USA	=	United States of America
USAID	=	United States Agency for International Development

Acknowledgments

First, let me express my deepest thanks to my lecturers, friends, family, and others who played their part in finishing the research. My heartfelt appreciation goes to my supervisors Dr. Risa Morimoto and Dr. Sara Stevano. Having Dr. Risa as my supervisor I consider myself a lucky person. The outstanding support and guidance she provided me and her professional and constructive comments and commitments from the very beginning until the finishing of my research are the key to the success of the research. My innermost thanks also go to Dr. Sara Stevano for the support, information, and encouragement she provided me during a time I need. I also would like to give my sincere thanks to all friends mainly Dr. Samson Makele who supported me morally from the very beginning of my research. My deepest thankfulness also goes to my brothers and sisters who supported me morally and financially on the time of my need

In addition to that, I would like to express my gratitude to my family mainly my father Ghebreab Weldetsion, and my Mother Tekia Teklemariam for the priceless morale and encouragement they provided me. My deepest gratitude also goes to my Wife Aster Adhanom my Children Elim, Ethan, and Evan without their encouragement and motivation the research will not be finalized. I would also like to appreciate and send my thankfulness to all my colleagues and my lecturers at SOAS University who provide me with their support to accomplish the research and my MPhil in Economics. Any errors or omissions are the author's responsibility.

Chapter one

1 Introduction

The first unit of the research deals with the topic of the research which is “Eritrea’s Self-reliance Policy and the Road to Sustainable Food and Water Security” and the main motive is to give the reader a generalized idea about the research paper. Different topics related to the background of the research, the statement of the problem, significance of the research, the research question and sub-questions, the research objectives, the study's limitations, and the organization of the research are discussed in this chapter.

1.1 Background

One of the main challenges of development today is how to improve the quality of life, especially for those who need it most within the carrying capacity of the planet. Therefore, the purpose of this research is to explore the importance of self-reliance as a development strategy in Eritrea as a means of addressing today’s ecological and socio-economic problems. “The concept of self-reliance is based on ecological economics, to show a more equitable and ecologically sensitive development pattern that leads to sustainable development” (Prinet 2000). In this research, the concepts collective of governance of self-reliance is used to put special emphasis on self-sufficiency in food security, and water adequacy.

East Africa is one of the worst drought-affected regions in the world. This prolonged drought in addition to the ongoing conflict left more than 20 million people across South Sudan, Somalia, Kenya, and Ethiopia without food and water and caused them to rely on foreign aid for survival (Tesfamichael, 2017). Confirming the United Nations Office for Humanitarian Affairs, UN-OCHA also revealed that 22.4 million people in the Horn of Africa region need food aid. Based on the statement, 700,000 people in Kenya, 1.6 million in Somalia, 6.1 million in South Sudan, 7.9 million people in Ethiopia and 6.2 people in Sudan require food support (Tesfamichael, 2017).

The GoSE development strategy highlights self-reliance, active people’s participation in development, and balanced regional development. “It strongly focuses on human capital formation, development of the infrastructure, environmental restoration and promotion of the private sector” (GoSE1994 and 1998). The priority of Eritrea’s national development is

undoubtedly spelled out in its human resources, infrastructure, and food security schemes and policy statements (AfDB 2012). Eritrea's focus on self-reliance policy with the support of collective governance is exceptional which is not experienced in other African countries. The government strongly argues that development cannot be achieved through aid but can be attained through trade and investment from development partners (GebreMichael 2016).

Eritrea which is located in the Horn of Africa is one of the few countries in the world, considered less recipient of foreign aid. The country follows a principle of self-reliance which might have helped in avoiding food and water crises. As a new country when Eritrea achieved its independence in 1991, the government received a war-torn country with poor or nonexistent public service. All development programs started from scratch. However, in the past two decades, the government established substantial funds to build a network of dams throughout the country to harvest water and guarantee incremental transition from traditional farming systems to modern agro-industrial methods supported by irrigation farming in pursuit of a program of food security. To attain the desired food and water security in the past 30 years the government built 785 big and small dams (Ministry of Information 2021).

According to Bernal (2014: 5), research on Eritrea presents several challenges. During three decades of war for independence, little research of any kind was conducted by scholars, and very little official data was recorded by governmental or international agencies. Bernal (2014) also described that scholars who focus on Eritrea usually have done so either because they are Eritreans or because they were inspired by the dedication and self-sacrifice of EPLF fighters.

In Eritrea 60-70% of the population similar to other developing countries depends on agriculture for survival. As the majority of the population depends on agriculture and the country does not own the desired natural resources that generate hard currency to import the required amount of food the government is working hard to fulfill and improve the demand of both the rural and urban populations for food and the government believes that this can be achieved by shifting from the backward traditional agriculture to modern agriculture (Ministry of Agriculture 2013).

Studies related to the topic of self-reliance policy on alleviating poverty in general and attaining food and water security, in particular, are hard to find. Mainly in the case of Eritrea, the topic is ignored by other researchers. Therefore this research will address the Eritrean self-reliance model and the existing collaborative process within the different institutions. The application of the self-reliance model will be expressed with the reference to the collaboration of the governance model. This model will be expressed by investigating the process of the collaboration technique of the different institutions. The outcomes of the self-

reliance model of collective governance are the securing of water sufficiency and the transformation of traditional agriculture into a modern agro-industry. The second outcome of the application of the self-reliance model is the geopolitical problem which is the sanction that hindered the development of different projects and both these outcomes will be illustrated in detail in this paper.

The research is a secondary qualitative research method and documents related to the topics under study are explored in detail. The data collected from different documents are analyzed and answered the main research question and sub-questions of the study. The role and the collaborative structure of the different institutions including the local communities around the developmental projects are identified in detail to answer questions related to the Eritrean self-reliance policy and its contribution to food and water security. The sub-question related to the socio-economic contributions of the projects is expressed and analyzed by referring to different books newsletters governmental documents and national news streams. While the sub-question related to the main challenges approaching the campaign and the difference on been self-reliant on making your own plan and depending on foreign institutions to decide what to do on your own projects are also examined in this paper. In addition to this, the paper also clarifies the role of each institution and its partnership with other institutions in the construction of the different developmental projects to attain the objective of the self-reliance model.

1.2 Overview of the Eritrean free choice policy and Aid tying policies of the West

The aid tying policy of the west and the Eritrean policy of free choice policy are two different concepts of development. Based on that in this topic the Aid tying policy of the west is explored by looking at different views of different experts. While the Eritrean philosophy of free choice policy is the concept which is taken from the interview conducted by Eritrea Embassy Media (2021) with MR Birhane Ghebrihiwet Charge D' Affairs, Embassy of the State of Eritrea to the USA on the current affairs of Eritrea, Ethiopia, and the Horn of Africa

1.2.1 Aid tying policy

Around \$15 billion of DAC's aid to developing countries which are around one-fifth of the total bilateral aid is tied to the purchasing of donors' goods. In this sense, it means that the aid recipient countries will be obliged to purchase goods from the donors at a price that is higher than the goods sold on the free market and the source of the money is the one that was received as an aid. Aid tying can be indicated as a technique that reveals where a recipient country can spend the money and reveals the restriction on how the aid can be used (Thirlwall and Pacheco-Lopez 2017). This is one of the main reasons that reduce the

real value of aid as aid restricts the aid recipients from being active participants in the competitive global market by purchasing goods that they need at a cheaper price.

Jared (2013) indicated that the provision of foreign aid is influenced by the preferences, Values, and domestic policies of the donor countries (Noel and Therien 1995 Freeny and McGillivray 2004 and Fleck and Kilby 2006). On the other side, the aid donors themselves are under pressure from economic and political interest groups on deciding the quantity and allocation of aid (Lohiri and Raimondos –Moller 2000 and Round and Adedokum 2004). Lobbying played a vital role in selecting which country is going to be awarded aid because aid is accepted as a lucrative business by numerous big companies (Action aid International 2005).

The real-world paradigms are very helpful in illustrating the theoretical model that documents how the economic and political interest groups and legislators influenced the allocation of aid (McGillivray and Oczkowski 1992 Murshed and Sen 1995, Lahir and Raimondos-Moller 2000 and Villanger 2004). Based on McGillivray and Oczkowski (1992) model of British bilateral aid and discovered that the decision-making on allocating and identifying the eligibility of aid is depending on the humanitarian commercial and political interests of Britain in the developing countries. Murshed and Sen (1995) developed a principal-agent model that illustrated how competing interest groups lobby aid agencies. Lahir and Raimondos-Moller (2000) also developed a political-economic model of foreign aid allocation illustrating how donor governments accept political contributions from ethnic lobby groups and then direct aid to the ethnic lobbying groups' country or countries of choice. Villanger (2004) discovered a "triadic" model that deals with the aid contributors weighing up the existing relationship between the different competing companies and the aid recipient countries which helped them to decide on how to distribute aid. Sevansson (2000) also expressed that similarly to other economic policies aid policy is also determined by competing social groups and witnessed that the expectation of aid may have the potential that leads to rent dissipation. Similar to this Therien (2002) Fleck and Kilby (2006), Milner, and Tingley (2009) also studied the way how donor countries' ideologies influence the flow of aid.

The imposing of restrictions by the aid donors towards the recipients on the process of how aid may be used has become a habit among the major aid contributors mainly the DAC members. The amount of tied or restricted aid was showing growth from time to time and it increased by 35% from 1979 to 2009, although there was criticism from the aid community about potential donors obtaining utility from tied aid (Gounder 1999). According to Kambur (2006), tide aid was one of the major features practiced by both British and American foreign

aid strategies starting from the modern aid movement that started in the late 19th and 20th centuries.

According to different aid kinds of literature, it was documented that the tying of aid by donors was associated with political, commercial, and security reasons. Dealing with commercial reasons is associated with stimulating employment, bolstering exports, and the improving balance of payment problems (Jepma 1991). The political attribute deals with satisfying the strong and organized lobbying groups (Lahiri and Raimondos –Moller 2000) and notifying the aid recipient countries to reform their internal government (World Bank 1998, and Hermes and Lensink 2001). Security reason is one of the main attributes which is associated with the involvement and the expansion of the donors' foreign policy and puts influence on the recipient countries (Zimmerman 1993 and Schraeder et al 1998) and it is also related to the fighting against terrorism groups (Harrigan et al 2006).

Tied or restricted aid increases the chance of the donor countries to prioritize their commercial and political agendas more than the interest of the recipient countries and this played a vital role in declining the real worth of aid. As a result, the practice of restricted aid will cause welfare losses for recipient countries by comparing to restriction-free aid transfers (Osei 2003, Quartey 2005, and Clay et.al 2008). Jepma (1991) indicated that due to tied aid there is an increase in the direct cost of the recipient countries in estimation that spread out from 15 to 30 percent. In terms of technical assistance of food aid, the cost of tied or restricted aid is more than that of the direct cost (Williams et al 2003 and Barret and Maxwell 2005). The finding of Baffour (2004) witnessed that there is a significant score on the prices of tied aid concerning the price of non-aid imports by the recipient countries. There is also an indication that said restricted aid can undermine or underestimate local institutional capacity (Areyeetey et al 2003) and it motivated recipient countries to practice a culture that describes the “lack of ownership” attitude toward aid (Clay et al 2008).

1.2.2. Eritrean free choice policy

Opposite to the aid tied, restricted aid, or conditional aid Eritrea is expressed as an exceptional country in the horn of Africa on its philosophy of free choice policy and is working hard to achieve its goals (Eritrea Embassy Media 2021). The roadmap of the philosophy of self-reliance and free choice is the outcome of the experience of the 30 years of war of independence. The leadership of the country believes that the objective is going to be attained through the resilience and unity of the different governmental institutions and the local communities. This dynamic can be a good illustration for other countries with its clear vision of self-reliance which indicates to stand tall depending on your-self eases the pressure imposed by the great powers. On the other hand, a nation that depends on others and

requests others to overcome or solve its challenges will open its door and be exposed to a many difficulties and be exploited to the degree where aid can be weaponized, at the same time a donor country will be welcomed to interfere on the national or internal strategy of the dependent country.

The free choice policy of Eritrea points out that a country has the priority to choose its partner of engagement and make sure that your partner believed in your rights and the friendship is constructed based on trust-ship and your partner knows that you have your own choice on implementing a policy that suits and benefits you rather than to be dominated. An outsider has to know that no one has the right to interfere in your internal issue and no one has the right to tell you what to do and not to do as no one knows what benefits you more than you. Your partner has to accept your lifestyle and the way how you are going to live at the same time they have to bring their own policy or style then you can meet in the middle and implement a policy that works for both. To make the partnership mutually successful equality must be sustained. In reality aid donors are not foreign aid or financial support providers they are also active participants or interferers in the internal issue of the aid recipient countries. And this is the beginning of the violation of national sovereignty and national right of the aid recipient country.

MR Birhane in his interview with Eritrea Embassy Media (2021) clarified that the free choice Eritrean policy doesn't mean being free and walking the walk alone and being isolated from the international community however it is a means of building strong cooperation based on the long-term vision of engagement that can benefit the member nations equally. Right now most of the aid donors' nations are against the policy of the free choice road map of Eritrea and they tried to put more pressure and exploit the weakness of the sub-Saharan African countries by enforcing them to implement what they told them to do otherwise the donation they are contributing will be cut off. This leads to the creation of a big hole or gap in the African countries and it is one of the biggest challenges to cure and be exposed to the inability to express their free choice and do what they want to do without permission or Authorisation of their masters. This makes African nations depend on foreign aid forever and builds unstable governments. Once Paul Kagame the President of Rwanda said that "dignity and self-reliance are not easy gains, the more we seek peace and self-reliance, the more resistance we face from external actors who do not support our progress. In the morning, they teach us about human rights but they come back in the evening to take away your rights and tell you to do as they say" (Behurai 2016:12).

Mister Birhane in his interview with Eritrea Embassy Media (2021) mentioned that "nationality awareness, cultural identity, and national identity are the main pillars that make a

country stand stable and the majority of African countries lack these imitative pillars and become dependent on foreign aid”. As it was discussed earlier Eritrean governments policy is clear and stable which believes in the freedom of choice and self-reliance with a reach experience that run for more than 60 years starting during the war for independence and does everything to achieve its objectives based on its internal will and interest and expand it through cooperation and engagement with others who are ready to work and achieve the mutual benefit based on a mutual or equal opportunity with their partners. Internal stability is one of the main priorities Eritrea follows, however, MR Birhane indicated that “this can be accepted as a headache for the global north aid providers because it is against their interest, and by any means and whatever it takes they have to stop and end the approach from happening and expand to the rest parts of Africa” (Eritrea Embassy Media2021). This is because the doctrine or philosophy of free choice policy of self-reliance is against colonialism, neo-colonialism, or globalization that dominated and pressurized. In this case, as Eritrea implemented the free choice policy of self-reliance policy, Eritrea is facing enormous pressure from the west the meaningless border war with Ethiopia and the sanction which was imposed without any real justification was aimed to get rid of and destroy the ideology Eritrea is following.

1.3 Stating the Research Problem

Sub-Saharan African states of governance dynamics are rarely under the radar of the critical case studies that concern land acquisitions and their dissatisfaction with the way how they handled it was growing massively. Based on research conducted in the fields of land governance, labor governance or agro-food governance constantly focuses on the role of corporate power, international institutions, and neo-liberalism on the other hand describing the state agency as relatively weak and inefficient (Alden Wily 2011, Bernards 2015 Greenberg 2017). *This paper seeks to challenge this conversation by putting more emphasis on intra-state governance capabilities depending on the collaborative governance model to assess the Eritrean model of collective of governance of self-reliance on attaining food and water security in Eritrea.*

According to Hamann (2020), modern scholars expressed the emergence of the corporate food regime and its impact on agrarian transformation. Due to the outcome of the dominance of neoliberal globalization, transnational companies as the sole owners of global food production, processing, trading, and distribution (Akram-Lodhi 201, Clapp & Fuchs 2009) dominate the new food regime. Different aid works of literature documented that, the tying of aid by donors was associated with political, commercial, and security reasons. Dealing with

commercial reasons is associated with stimulating employment, bolstering exports, and the improving balance of payment problems (Jepma 1991). The political attribute deals with satisfying the strong and organized lobbying groups (Lahiri and Raimondos –Moller 2000) and notifying the aid recipient countries to reform their internal government (World Bank 1998, and Hermes and Lensink 2001). Security reason is one of the main attributes which is associated with the involvement and the expansion of the donors' foreign policy and puts influence on the recipient countries (Zimmerman 1993 and Schraeder et al 1998) and it is also related to the fighting against terrorism groups (Harrigan et al 2006).

There are different findings from different aid-related studies (Balcilar, Tokar, and Godwin, 2020). Some literature indicates that foreign aid has no significant effect on growth and aid is considered as growth-Neutra. Bone (1996) highlighted that aid neither benefits the poor nor increases investment. Ragan and Subramanian (2005) did not discover any evidence that indicates there is a positive or negative relationship between aid and growth. On the other hand, Doucouliagos and Paldam (2009) concluded that aid is not effective because they did not find any significant effect of aid on economic growth. Similarly, Dreher and Langlotz (2017) did not find any significant relationship between aid and economic growth.

Knack (2001) proposes that aid will undermine the institutional quality of a country that depends on aid by reducing its accountability and motivating corruption and rent-seeking manners. Djankov, Montalvo, and Reynal-Querol (2008) also acknowledged the same conclusion in their study where aid is the source of a windfall of resources that encourages rent-seeking behaviour, which is the same as natural resources courses. Oya's (2006) argument indicated, that “donor-recipient relationships have left scarce policy space to recipient governments to formulate innovative trade, agricultural and industrial policies. Moyo (2009) argues that African countries are poor precisely because of all the aid they receive” (Balcilar, Tokar, and Godwin 2020).

Different studies indicated that political democracy is positively correlated with improved physical quality of life, fundamental needs fulfilment, and lower-income inequality (Sorensen 1991; Wickrama and Mulford, 1996). And others expressed that domestic investment and political democratization are vital aspects of food and water security (Craig Jenkins and Scanlan 2001) some scholars stated that food and water security is a political problem that could be tackled through political change mainly political democratization, arms, and trade restrictions and the reduction of violence (J. Allouche 2011).

Sub-Saharan Africa (henceforth, “SSA”) is known as the most vulnerable to the impacts of climate changes due to its heavy dependence on agricultural and natural resources, warmer baseline climates, low precipitation, and limited ability to adapt (Kurukulasu Riya and

Mendelsohn 2007, 2008a; Hassan and Nhemachena 2008; Thornton et al. 2008). The SSA's Vulnerability is caused because of severe climatic conditions, poor information systems in the continent and slow technological changes (Dinar et al. 2008). The continuous climate change has a great impact on the fluctuation of rainfall, increasing the incidence of droughts, raising the average temperature, and threatening the availability of fresh water for agricultural production (IFAD 2009). This research believes these are the most common and familiar natural challenges which are hindering food and water security. On the other hand, this research is also going to consider the geopolitical challenge such as the border conflict between Eritrea and Ethiopia, the no-war no-peace situation, and the sanction imposed on Eritrea are discussed in detail. The performance of Africa's agriculture is at its lowest stage so African countries have to take action and transform their economic structure to attain growth. With the execution of an accurate policy and enhancing a convincing environment, the agro-industry has the potential to generate promising products from the agriculture, manufacturing, and service sectors. Agro-industry boosts the value addition in GDP and improves the global value chain and it creates job opportunities that increase income, also promote food security that improves nutrition, and builds a healthier and more productive workforce that plays a vital role in alleviating poverty (Andinet 2017)

Based on the above-mentioned different arguments this research paper is going to prove that, despite the sanction imposed by the geopolitical interest of the big powers, and unlike the other countries in the region, Eritrea is the sole country that rejects food aid. Following a free choice policy of self-reliance with the collaboration of different institutions in the country in the last thirty years, Eritrea was able to design and construct a large number of big and small dams to gather rainwater in different parts of the country. The main purpose of these developmental projects is to implement modern agro-industrial activities to attain food and water security and boost the economy of the country rather than depending on food aid. Therefore, this research investigates the self-reliance policy and collective of governance strategy, which is the driving force of existing Eritrea's economy

1.4 Significance of the Study

The success stories of Food and water security are many and one of the successes that could be reported is the story of Eritrean success in attaining food and water security through the Collective of governance of self-reliance model. Different researches are conducted on the topic of food and water security however, little is done in the case of Eritrea and it is hard to find academic research and publications that concern food and water security as a result this research is going to have a vital role in filling the existing gap on the

subject and will give an important image about Eritrea and its collective of governance structure of self-reliance model and the role played on attaining food and water security. As one of the young and newest countries on the globe, Eritrea is located in one of the most unstable geopolitical regions of the world. Despite the country experiencing different man-made and natural challenges, Eritrea registered incredible progress in the building of different water reservoir projects that played an essential role in achieving the food and water security program of the country. So this research has the potential of providing significant information and sharing the Eritrean story on the self-reliance model and the collaborative of governance process of the different institutions in achieving food and water security that will be a great lesson to others.

By clarifying the research's questions, the research is going to play a great role in enhancing new information on the available literature gap in the Horn of Africa, particularly Eritrea (Bernal 2014). As a result, the information this research provides will enrich the literature available on the subject matter. Accordingly, it will extend the literature on, self-reliance, collective governance, foreign aid dependency, food security, agro-industry, and its economic contribution and the role of the state, and the role of the different institutions and the local communities in attaining the objective of the state. Furthermore, it will give a clear image of the geopolitical challenges encountering by investigating the case of Eritrea. The study is going to contribute to the ongoing debate between the advocates and critics of the aid dependency and collective of governance of self-reliance theoretical framework. The study argues that despite the huge amount of foreign aid awarded most African countries are still self-insufficient in food and water security. In the case of Eritrea, despite of the different challenges it is different and the country is almost secured its water sufficiency.

As the research is the first to deal with subjects related to food and water security by relying on the self-reliance model and the link between the collaborative governance models it has the significance of being a great example for other researchers that the model can serve as an important conceptual framework for other models. The research also has the significance of acting as a good platform for other researchers who has the will on researching topics related to the subject and the region. Despite the existing challenges, Eritrea's progress in different developmental sectors in a short period is immense however these stories are still unexplored, unreported, and untold stories. The study also shows that food and water security through the self-reliance model and the collective of governance is attainable and the experience of Eritrea can be shared with other developing countries mainly the Sub-Saharan countries.

1.5 The Research Questions

The main objective of this research is to identify the role of the self-reliance policy and collective of governance of Eritrea in achieving food and water security and will be guided by the core question which is supplemented by several sub-questions.

This thesis examines Eritrea's model of collective of governance of the self-reliance model and how it relates to water and food security?

The main research question is further, accompanied by the following supplementary sub-questions

- What is the role of the state in organizing the different institutions and the local communities on implementing the collective governance based on the self-reliance policy to achieve food and water security?
- How did the geopolitical challenges of sanctions, war, and no-war, no-peace situation hinder the collective governance policy of self-reliance on achieving food and water security in Eritrea?
- What are the socio-economic developmental contributions of the agro-industrial projects to the local communities?

1.6 Objectives of the Research

- Both sustainable food security and sustainable water security are considered as important goals of the well-being of humanity, this paper aims to suggest the collective governance of self-reliance as a development strategy mainly for developing countries as a means to address today's environmental and socio-economic reality. The main objectives of the research are listed below
- To assess the role of the state and its collective governance of self-reliance policy in achieving sustainable food and water security in Eritrea
- To identify the main geopolitical challenges that the Eritrean government approached in applying a self-reliance policy for food and water security development
- To be acquainted with the role of each institution and its collaborative structure with the other institutions in achieving the desired target of the self-reliance policy
- To find out the socio-economic contributions of the agro-industrial developmental projects to the local community and the environmental perspective

- To discover the state's institutional organization and the collaborations of the different governmental institutions and the local communities in dealing with the different challenges.

1.7 Limitations of the Study

Despite the research clearly explaining the background of the study and methods used to address the validity and reliability of the research, due to financial issues and time constraints the research is conducted via secondary data collection technique instead of primary data collection technique. In this research, language is considered one of the basic barriers because most of the interviews which are collected from the secondary source used as the main source of the research are conducted in local languages so it is time-consuming to translate the data collected to English and analyze it. Due to the scarcity of enough amount of data related to the food security indicators the research is also restricted to certain topics which are designed to answer the research question and its sub-questions, so it is not going to cover the whole developmental projects in the country, therefore, can not represent the activities of the entire developmental projects run by the country.

1.8 Organization and Structure of the Dissertation

The research paper is organized based on two parts. The first part of the study is related to the general background of the paper and the existing literature related to the subject under study. While the second part of the project presents the main finding of the research. In addition to this, Eritrea's socio-economic-political context and a general overview of the geopolitical position of the country are discussed briefly in this section.

The research is conducted based on seven different chapters. The first chapter of the research is built-in with the introductory and background part of the study. This chapter is also supported by the research question to express the reason why this study is conducted. The structure and limitations of the research are also included in this chapter. Both chapter two and three discovered the literature review and give the reader the image of the research paper and its historical development. Chapter two addressed literature reviews related to topics that include concepts of agro-industry, collaborative of governance, foreign aid, and the role of the state in dealing with the self-reliance policy and collective of governance. Regarding to chapter three it is built based on the existing studies conducted by different scholars and reports from different organizations that highlight about food, and water security, and other themes related to the topic.

Chapter four demonstrated how the, method, and methodology techniques of the research are implemented to answer the main research question and its sub-questions. This section raised important points regarding the epistemological and ontological positions of the research. The chapter also attempted to explain the role of the collaborative governance model as the main applicable technique that will help in providing the desired answers on assessing the self-reliance Eritrean model and giving brief answers for the research question under study. Furthermore, this chapter discussed the various qualitative sources used in generating the data, the data analyzing technique, and the ethical consideration that are addressed in the research in detail.

Chapter five deals with Eritrea's socio-economic and political context and provide a clear image of the main geopolitical position of the country and addressed the historical context of modern Eritrea and colonization. The Warsay-Yikalo campaign of nation building strategy of Eritrea, self-reliance and state emergence of Eritrea are also addressed on this chapter. The background of the border conflict between Ethiopia and Eritrea and the sanctions imposed to Eritrea and their consequence on the economic development projects of the country are also detailed on the chapter.

Chapter six is a chapter that deals with Eritrea's self-reliance policy on food and water security. This chapter addressed the history of Eritrea's self-reliance policy starting from the time before independence. The role of the state in implementing the policy that leads to attain food and water security is also investigated in this chapter. The developmental projects of the country are constructed with the collaboration of different institutions and the local communities this collaboration and relationship are investigated in detail and assessed based on the collaborative governance model adopted by Ansell and Gash (2008).

The socio-economic contribution of the developmental projects which are built with the collective of governance and self-reliance strategy is discussed in this section. The exploration of both Halhale and Azieba dairy agro-industries and their role in the economic contribution toward the local communities is conducted in this section. Based on the level of capacity building, the market stability of the products created for the local community, the new infrastructural development, the change the projects made to the community's quality of life, and the environmental change they created are discussed in this chapter. This socio-economic contribution is considered the positive outcome of the collaborative governance model that represents the self-reliance policy of the nation.

This chapter also provides a brief image of the main challenges the government is approaching in practicing the collective of governance of self-reliance policy. The geopolitical challenges namely the Ethiopia and Eritrea border conflict and the no war-no peace situation

and the sanctions imposed on the country and the negative effect of these challenges on developmental projects of the country are discussed in this chapter.

Chapter seven which is the final chapter of the research deals with the concluding statement by summarizing the main findings of the research. The recommendation of the research is drawn based on the findings of the research on what measures should be implemented to discover a solution for the existing problems. Different suggestions on what action should be taken for further research are also explained in this section.

Chapter Two

Literature Review (Part 1)

Different concepts and theories related to the concepts of agro-industry, collaborative of governance, foreign aid, and the role of the state in dealing with the self-reliance policy and collective of governance are addressed in this Chapter in detail.

2.1 The State and Institutional Theory

Modern organization research under the umbrella of institutional theory encompasses enormous theoretical and empirical works which are associated with shared attributes on the streams of social norms and collective expectations as the key foundations of an organization's structures, actions, and results. At the moment institutional theory is widely identified as a prominent approach to organizational research (David and Bitektin 2009, Greenwood, Oliver, Sahlin and Suddaby 2008) however there is a conflict among scholars in terms of referents of the main concepts and the key assumptions related to how the social norms and expectations influence organizations. For instance, some scholars use the term to represent a specific organizational practice or conditions (Meyer and Rowan 1977). Others use the institution to represent the aggregate organizations (Selznick 1949).

Any change or modification of state policy will influence the interest and strategy of the main actor that has the power to determine if programs are going to feedback on whether it is going to strengthen the program, underestimates it, or have the opportunity to change the future. The most important theoretical framework is the macro-level political institutions that shape the politics and political participants who are active during constraints that have the potential to influence the state and its policies, modifying the political institutions in the process, and others.

Skocpol (1985) sent a message to scholars to embrace a Weberian recognition of states as, sets of political organizations that exercised control of the people and their territory and engage actively in the legislative, executive military, and policy sectors (see review in Amenta 2005). The state has a monopoly power on legitimating violence and works on maintaining peace and order. On extracting resources from the society and seek on the expansion of the national territory. States were accumulative sets of organizations with unique political tasks, missions, and responsibilities. At the same time states have the role of structuring the relationship between political authorities and society. States also played a

vital role in the construction of strong relationships among the different groups of their citizens and the making of networks with other states and states are always active in the making of state policy.

State-centered expertise thinks beyond the theoretical concept and changes the direction to claim that states were the main powerhouse in politics. Skocpol (1985) identified a “Tocquevillian” conception of states or what Goodwin (2001) calls a “state-constructionist” conception. Due to various reasons, State institutions can be configured in various ways which could be a historical accident of geography, the outcomes of wars, constitutional conventions, or could be uneven mechanisms of political-economic bureaucracy, and intellectual development. No matter what the motive for their originality or adoption if these political activities would have an essential influence on political issues and processes on new issues related to industrial capitalism. Lukes (1974) indicates that political institutions would pressurize which political battles were possible to happen and expect which group might win political battles.

The largest part of domestic politics may be shaped based on different macro-level political institutions. Generally, authorities in state political institutions are either centralized or decentralized. Institutions of legislative, executive, judicial, policing, and other governmental sectors within existing political authorities may be settled within sets of organizations or may be scattered among different sections which have autonomy and functioning procedures. Amenta and Ramsey (n-d) also mentioned an argument that was related to the concept that says states across were understood organizationally largely in a resource-dependency technique. As organizations, the level of autonomy and capacity of the different parts of the state may vary accordingly among the different parts of the state. Based on that the concept of the autonomy of the state was defined as the ability to define the independent line of the process, while the state capacities were expressed as the ability to carry out the lines of action besides Mann’s (1986) “infrastructural power” (Skocpol 1985). The concept of state autonomy and capacity brings the debate of the “power to” do something without neglecting “power over,” where political expertise and sociologists had put emphasis (Lukes 1974). The existing variations in state autonomy and capacity in executive bureaucracies were argued as being essential in expressing political outcomes all over time and places.

The institutional theory known as historical institutionalism focuses on the idea of institutional path dependence by highlighting feedback loops, formative moments, and unexpected and unpredictable results. Path dependence is frequently used to conceptualize stability instead of change and provides a fundamental judgment as to why a specific path can be extremely difficult to reverse. Path dependence stated that there is a possibility of a

variety of outcomes to happen, even when there is a similarity in the conditions applied, and the outcome of small or contingent events can be large consequences (Pierson 2004). Accordingly, as was argued by Levi, “Once a country or region has started down a track, the costs of reversal are very high. There will be other choice points but the entrenchment of certain institutional arrangements obstruct an easy reversal of the initial choice” (Levi 1997:28).

On the other hand as the concept of path dependence tends to express institutional stability and rigidity, in reality, the character of the concept is dynamic instead of static. Especially path independence underlines self-reinforcing sequences characterized by the formation and long-term reproduction of the available institutional pattern. The benefit of the selected development, roadmap increases from time to time compared to other possible options (Mahoney 2000). Based on his seminal book of 2004, Pierson indicated that “New institutions and policies often generate high fixed costs, learning effects, coordination effects, and adaptive expectations. Institutions and policies may encourage individuals and organizations to invest in specialized skills. Deepen the relationship with other individuals and organizations and develop particular political and social identities. These activities increase the attractiveness of existing institutional arrangements relative to hypothetical alternatives” (Pierson 2004: 35).

In the social science stream, institutional change was analyzed from various perspectives. Many scholars accept institutional change as to how purposefully designed institutions are subject to a collective-choice process in which the actors bargain or compete to try to execute institutional changes that benefits their direct interests (Ostrom 2005, Mahoney and Thelen 2010). On the other hand, conceptualize institutional change as an evolutionary process occurring spontaneously via an uncoordinated selection process involving many different agents (Williamson 2000). Other scholars tried to mix up both approaches in what can be considered an equilibrium view of institutions (Greif 2006, Kingston and Caballero 2009).

2.2 The Role of State Institutions

In dealing with the agro-industrialization challenge in Africa, the fundamental role of national and sub-national governments is rarely accredited. Global research which makes up assumptions of global level-institutions and the drafting of policy on the global level is suppressing national level activities, while critical globalization researchers’ statisticians’ approaches are out of date given the widely used nature of corporate globalization and its civic counter-movement (Falk 2005). During the 1990s, the concept of “development state”

was a popular concept among the majority of development researchers; however, it indicates a model of interventionism for microeconomic growth instead of a protective task of the state which is equivalent to vulnerable or marginalized constituents. Critics expose the Sub-Saharan Africa states as the "mere transmission belt" that provided the global capitalism to function at the national level of the states (Amuwo 2009, Cox 1996 Evers, Seagle, and Krijtenburg 2013; Soderbaum and Taylor 2001). Accordingly, critical development researchers are in favor of participatory methodologies and their main focal points of research are the local communities. Another noticeable issue is the ignoring of national institutions both by the global and developmental scholars who believes that states or nations in the developing world are failing to govern their institutions effectively and efficiently a lot was said about the weakness and inefficiency of the domestic institutions in the global south inadequacy of capacity and the fragmentation of social control which describe several post-colonial states and lead to numerous abusing of power (Krasner 1985, Migdal 1988, Tilly 2006).

In the case of Eritrea as a recently emerging country it accepted a war torn country and the state's leadership followed the self-reliance policy that accommodate the collective participation of different institutions with its own developmental strategies. (Muller 2011) indicated that Eritrea even becomes regarded – together with Ethiopia, Uganda and Rwanda – as a model in terms of reconstructing a war-devastated country, symbolising a new style of governance in post-Cold-War Africa (Ottaway, 1999). Taking a closer look at that style of governance reveals it was driven by the objective to recreate the new state in the image of the 'quasi state' built around Nakfa during the liberation struggle. This indicates that the style of the governance is taken from the past experience of the thirty years of war of independence. This was imposed by giving the core governmental positions and other important state bureaucracies to the leading EPLF cadres this promoted the reality that resulted in imposing policies based partly on mobilisation actions that demanded personal sacrifices (Muller 2011).

Democratization and accountability are the common and significant challenges facing the context of sub-Saharan African countries however the disregarding of the active state actors and institutions collectively by embracing the post-political perspective is improper. In recent times prominent scholars advised researchers to conduct more research about politics this is due to the importance of state institutions and governance in determining socio-economic outcomes (Mouffe 200, Scoones 2015). In the original Weberian notion of the state, a state is mentioned as "an organization that successfully claims the monopoly of the legitimate use of physical force within a given territory" (Weber 1948:78). In contemporary thought, the

state is stated as a “set of political institutions of rule, geared to the organization and continuous management of economic development” (Leftwich 2014:181).

Dealing with a state in critical studies is going to change the norm of the analysis on highlighting the questions of governance. The hard work done to initiate sustainable agricultural activities are an issue of regulatory governance. As was indicated earlier the fast expansion of land acquisition in sub-Saharan Africa is not determined by private investors this is due to the recent years' change where the African governments implement policies that convince corporate investors and generate more investment and capital for the region. Different national and sub-national Investment Promotion Agencies (IPAs) are working actively in image-building and recruitment activities and engaged in administrative techniques for the making of businesses (Cotla and Toulmin 2008, Harding and Javorcik 2011). African countries are characterized by offering the National and sub-national Promotion Agencies different advantages such as providing concessions on income taxes, excluding from registration and importing duties reducing the employers' social security contributions, or the out-righting of grants for the sake of attracting investments (Dufey, Greig-Gran and Ward 2008). The implementation of this technique vigorously supports the conventional development approach in agricultural activities and has the capability of building principles of global market integration structures that resulted in the expansion of productivity through promoting capital accumulation and corporate economy of scale.

On the other side, it is believed that little attention was paid by African leaders to the making of policies related to the social protection process and land and labour rights, in addition to this it is very essential to revise the ignored environmental conservation policy to tackle any unpleasant environmental effects that resulted from the ongoing transforming process. Some organizations and scholars have echoed on non-state actors to fill the regulatory gap and present an innovative governance structure via corporate social responsibility (CSR) initiatives, voluntary codes of conduct, or third-party certification schemes (Breslin and Nesadurai 2018, Cashore, Auld and Newson 2004; Margulis and porter 2013). These concepts are based on the assumptions that private investors will be forced to self-regulate which is generated due to the change in the corporate performance norms or traditions and communal pressure. Even though the concept is amazing the academic literature has identified the weakness and the limited impact caused by the voluntary measures (Ronit 2012, Vogel 2005).

Jennifer Clapp (2016) witnessed that responsible investment initiatives in the agricultural industry are suffering because of weak requirements, low participation rates, the irregularity of the business application, and the proliferation of competing schemes. Witnessing the

limitations of the non-state participants it is the right time to put more attention to state institutions and the policy which they legislate, implement, and the judgment they make. Unlike the assumption that indicates the availability of a regulatory void in African countries public policy can be mentioned as the well-established regulatory framework that investors will consider which is different from the vision of a voluntary regulatory framework. The practice of public policy plays a vital role in identifying the realistic risk of the legal outcomes in response to compliance.

2.3 The Collaborative Governance

The new strategy known as collaborative governance has developed and brings the different stakeholders together in a shared forum to bring consensus-oriented decision-making. The emergence of collaborative governance was a reaction to the failure of the downstream implementation and the high price and politicization of regulations. On the other hand, it can be said it is the outcome of specialization incapacity and the expansion of knowledge. As knowledge is becoming more specialized and expanded and institutional structures become more complex and interdependent, the need for collaboration becomes more essential (Ansell and Gash 2007). In the case of the Eritrean government the government, imposed a collaborative, whole-of-society approach, that promote extensive consultation with lively participation of communities, different institutions, and several experts and stakeholders, by identifying the main priorities, goals, and tangible objectives,. This technique played a vital role on recognizing the critical challenges and vulnerable sectors or populations that hinders the national development program (Ministry of Finance and National Development 2021).

“As baseline definition, it can be taken that governance refers as the rules and forms that guide collective decision-making. That the Focus is on decision-making in the collective implies that governance is not about one individual making a decision but rather about groups of individuals or organizations or systems of organizations making decisions“ (Stoker 2004:3). Lynn Heinrich and hill (n-d) indicated that governance applies to laws and rules that pertain to the provision of public goods. It was also mentioned that collaborative governance is a kind of governance where public and private actors work collectively in a distinctive manner using a particular technique to construct laws and rules for the provision of public goods

Sometimes the followers of collaborative governance described the collaboration as a concept developed in stages. For instance, Susskind and Cruickshank (1987), identified the three phases of the consensus-building process namely, *prenegotiation*, *negotiation*, and *implementation* phases. Gray (1989) also mentioned the three steps of the collaborative

process which are *problem setting, direction setting, and implementation*. According to Edelenbos (2005), the steps in the collaborative process are mentioned as *preparation, policy development, and decision making* where each step is consisting of several stages.

In the collaborative governance theory, face-to-face communication played a very important role because it is the core of the process of building trust, mutual respect, shared understanding, and commitment to the process (Gilliam et al). (Bentrup 2001) appreciated the face-to-face communication system by saying that it is the centre of the process that breaks down stereotypes including other constraints related to communication that prevent exploration, and mutual gains. On the other side, some scholars expressed face-to-face dialogue is important however it is not an adequate condition for the sake of collaboration.

Trust building in collaborative governance is becoming one of the key aspects of the infant stage of the collaborative process and it is quite difficult to achieve it (Murdock, Wiessner, and Sexton 2005). A good collaborative leader identifies the building of trust among one-time opponents in advance of being manipulated by stakeholders. Trust-building is also considered a time-consuming procedure that needs long-term commitment to attain a collaborative ending (Ansell and Cash 2007).

Margerum (2002) witnessed that “member commitment” was the most important feature that facilitates collaboration. Commitment s related to the original motivation to engage actively in collaborative governance. Commitment to the process indicates the belief in that good faith bargaining for mutual benefit is the top priority to achieve desirable policy outcomes in need (Burger et al, 2001). Commitment depends on the trust that others will admire your perspectives and interests. As the engagement moves up the feeling of ownership also increases (Gilliam et al 2002). The additional angle of commitment is known as ownership of the project. Interdependence fosters an aspiration to engage actively and a commitment to meaningful collaboration. differently, if interdependence is poor the building up of effective trust will be very difficult if an individual stakeholder starts to threaten to withdraw from collaboration, the readiness and commitment of the entire stakeholders have the probability to be exposed to risk as a result of the development of ownership, understanding trust will be at its lowest level (Ansell and Cash 2007).

2.4 Self-reliance

Self-reliance was coined by Ralph Waldo Emerson in a similarly titled essay published in 1841 which stressed the trust in one’s present thoughts, skills, originality, belief in own capabilities and genius, and living from within (Prenet 2000). Although more growth and

global economic integration are not the answer to our ills, complete economic independence, through the elimination of all trade and removal of all ties with the rest of the world in the name of sustainability, is not a solution either. Trying to achieve this level of independence through complete self-sufficiency is just another extreme goal that is neither possible nor desirable. What is desirable, however, is to seek a balance between global interdependence and complete autonomy by promoting economic localization or self-reliance which involves the breaking down of global and centralized economic activities into smaller, more manageable units. The goal of self-reliance is simple; it seeks to create a new economic and social order by reclaiming the economy for the benefit of the people all within an ecologically sustainable development framework. The rationale behind self-reliance is ensuring that society can meet its basic needs without having to rely on the global economy (Prenet 2000).

The concept of self-reliance came to Africa at the beginning of the 1960s as a post-independence reaction to the legacy of colonialism and other economic orders related to it. As a substitution for the traditional export-oriented approach, African countries looking for a new strategy of development to avoid the everlasting disadvantage of the economic relationship with the developed world and self-reliance is identified as one of the practical alternatives. Galtung (1983) mentioned three fundamental basic points that help to understand the term self-reliance.

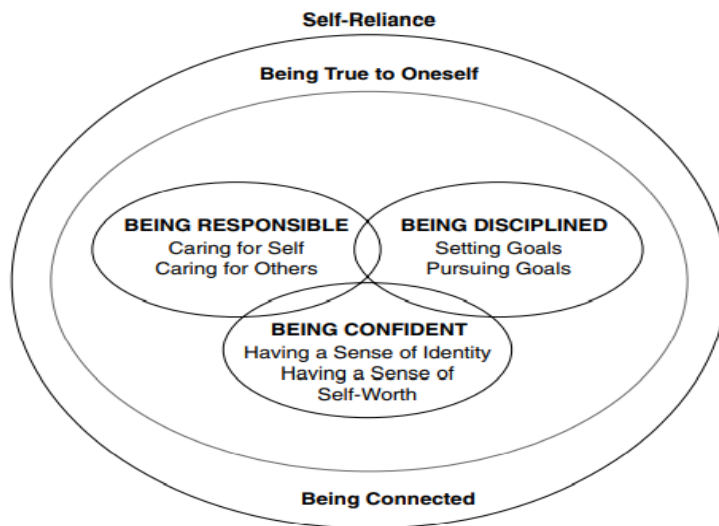
1. Development has to develop manpower, not things, which indicate that the foundations of development theory and practice must be based on fundamental human needs which are physical and mental.
2. Development should be practical through autonomy. This means the need to depend on self-creativity, one's land, natural resources, and capital even if they are limited.
3. Underdevelopment is mainly, though not exclusively; the product of international structure and that self-reliance becomes not merely an instrument of growth but also an instrument of changing this structure.

2.5 Assumptions of Self-reliance

Smith and Liehr (2014) stated the traditional themes that represent the assumptions of self-reliance theory are "being true to oneself" and "being connected". The assumptions cross through the three self-reliance concepts. The assumption of "***being true to oneself***" expresses acknowledging one's heritage and surviving depending on the majority point of view of one's culture. The second assumption "***being connected***" illustrates the identifying

and utilizing of resources within the making of it. All the talents and creations the individual owns are not for the benefit of the individual solely, but it is for the benefit of the family community and cultural group, overall it is for the benefit of the nation collectively. The figure below shows the bond between the main concepts and assumptions of self-reliance

Figure 2:1 the concepts and assumptions of self-reliance



Source Smith and Liehr (2014)

The model of self-reliance in the above figure (illustrates the existing patterns of the interconnecting circles in maintaining a holistic worldview. The three circles in the middle of the model which are interlocking within each other identify the existing mutual connection between them via the intertwining and the interlacing of the concepts.

As is indicated in figure 2.2 “self-reliance is being true- to self and is lived by being responsible, disciplined, and confident while staying connected to one’s cultural roots” (Smith and Liehr 2014). The main three concepts of self-reliance are *being responsible*, *being disciplined*, and *being confident*.

Being responsible: According to Smith and Liehr (2014), this concept is described as being accountable to care for self and care for others by getting assistance, respecting self, respecting others, and respecting the creator. The team respecting others can be achieved by being dependable and accountable. Respecting the creator can be attained by honoring traditions, values, and languages.

Being disciplined; This concept is aimed at setting goals and pursuing targets, by taking all the necessary risks and decisions to achieve objectives. Following the making of decisions and setting goals, can be attained by designing a plan, getting assistance, and redirecting one's effort.

Being confident; This concept is referred to as owning a sense of identity and self-worth. Self-worth stands for knowing self within one's cultural heritage and feeling proud of one's heritage and accepting cultural values and beliefs.

2.6 Self-reliance in African Countries: The Case of Rwanda Tanzania

The aid which still provides half of the budget to the developing countries is not the answer. Africa has received around one trillion dollars as aid from the west in the past four decades. "But no nation has ever attained economic development by aid (Chu 2009). Dombisa Moyo, author of the book entitled "Dead Aid" believes that aid is not just productive, worse it can be destructive, corrupt leaders siphon off money, merely inefficient waste it and millions of people end up hooked on handouts. "No country can depend on development aid forever such dependency dehumanizes us and robs us of our dignity" (Chu 2009).

During the session of 2016, World Economic Forum Howard Buffet pointed out that "people have to hope" that is people have to have the belief that change can happen at any time. This change is all about self-reliance and this hope in many African countries can be achieved one day as African hope can no longer be about easy political narratives. During the forum, former UK Prime Minister Tony Blair pointed out that "camera-ready opportunities in which the wealthy give to the poor are not the way to develop a resilient and self-reliant culture".

Under the government of Julius Nyerere and the national party Tanganyika African Nation Union (TANU), Tanzania was ruled by one part under socialist policies (Omari, 1974). At that time the developmental policy of the nation was mainly centered on self-reliance, Ujamaa, and the center of development was agriculture. The concept of Ujamaa was used and integrated into the country's development policies as a means to link with the national principle by excluding any interference from the capitalist world. The modernization of Tanzania after independence from colonialism was known as "African Socialism". Where it neither benefits the capitalists west nor the socialist east it stands with the African Socialism principle.

Ujamaa mainly focused on agriculture and developing the rural area is the prime priority of the development agenda. However, due to several circumstances, the outcome of the

principle was below the expectation as many areas are not capable of producing the desired target of goods. In addition to this the new educational system introduced was not computable and many students were stranded and unable to have access to education which left them without proper skills that can make them competitive in the job market. With a good way of thinking post, the British colonization era the self-reliance development strategies of Tanzania practiced failed due to the implication of villagization (Jaimungal 2019).

Rwanda bears the culture of self-reliant policy despite its difficult past and decided to control its destiny by itself. Kagame Rwanda's president pointed out that "we want aid but we need to participate in where the money goes". Based on the hope of a new future for the country, after the civil war of the 1990s, Rwanda started from zero and every individual in the country has to join and contribute something by saying that we need to create something for ourselves (Colmen, 2016).

For the last two decades, the Rwandan government' embraced neoliberal developmental policy on delivering health and education at the cost of generating jobs. As the government reviewed the policy it discovered that it was in the wrong direction and find out that it was extremely difficult to generate enough amounts of jobs that satisfied the demand of its population. To counter this challenge the government decided to look for an alternative and introduced the Agaciro which is translated as dignity or self-worth as a term "Agaciro appealed to the national goals of self-reliance and emphasized the importance of solidarity in the face of external threats" (Behuria, 2016:3). Agaciro symbolized individual dignity and it advocated for individuals to have a sense of responsibility for the way they lived instead of depending on the government for help. The concept of Agaciro worked as a temporary fix to the unsuccessful inequality development strategy created by the neoliberal policy.

Several contributors made a verdict to a setback or pull out from donating any aid to Rwanda after it was reported that there was proof that the Rwandan government was supporting a rebel group in the Democratic Republic of Congo. In this case, donors from the European Union suspended \$90 million the United Kingdom withheld \$34 million, Sweden suspended more than \$10 million, Germany Suspended \$26 million Netherlands canceled around \$6 million and the USA annulled all the military aid supposed to be given to Rwanda at that time (Behuria 2016). The Rwandan president argued that "solving the crises will be impossible if the international community continues the issue erroneously" (Behuria 2016:6). Some scholars reported that whatever the level of Rwanda's involvement in the Congo's rebel groups' support the pulling out of aid created a series of challenges to the Rwandan government.

According to Behurai (2016) since 1994 foreign aid accounted for more than 40% of Rwanda's revenues and it was the main base for the economic growth of the country for more than two decades the country was showing a 6% growth yearly except in the years of 2003, and 2013. The importance of Agaciro becomes vital after the withdrawal of foreign aid. The national dialogue of the nation in 2012 was themed "Agaciro: Working for Self-Reliance." General Frank Mugumbage stated that dignity in Rwanda "had been lost through our reliance on aid". The making of the Agaciro Development Fund (AgDF) in 2012 was thought as a means "to instill a sense of ownership, change the mindset of dependency and build the dignity Rwandans deserve." The political significance of Agaciro in Rwanda was inherited in a united devotion to self-reliance. The RPF (Rwandan Patriotic Front) created solidarity to achieve a common goal and targeted the external threats (western donors) which were perceived to be attacking Rwanda's sovereignty. As was stated at the National Dialogue of 2012 the president of Rwanda Paul Kagame said that "dignity and self-reliance are not easy gains, the more we seek peace and self-reliance, the more resistance we face from external actors who do not support our progress. In the morning, they teach us about human rights but they come back in the evening to take away your rights and tell you to do as they say" (Behurai 2016:12).

RPF articulated that Agaciro is an expressive symbol for the development agenda that individualized dignity and they also accept that they are the agents of their own change. The aim was to put entrepreneurship as a central point which was supported by the governmental investment in the health and education sectors. RPF also indicated that Agaciro represented the qualities of market society and placed a load of failure on individuals themselves. It also advised that individuals have to work hard and took out the government's load from creating jobs for the unemployed population. The development strategy was developed along neoliberal lines at the same time some of the strategies were similar to those of the developed states. Even though the country ignored its manufacturing sector it embraced market-based reforms which are greater than that of the previous East Asian development. The government was successful in the educational and health sectors. In the educational sector, enrolment improved from 72.6% to 96.6% between the years 2000 to 2013. In the case of the health sector, the maternal mortality rate declined by 60% and the infant mortality rate was reduced by 70% between the years 2000 and 2013 (Behurai 2016).

Kaplan (2016) indicates that both Eritrea and Rwanda own a lot of similarities by saying that both the countries are under the leadership of a cohesive rebel organization that won control of their countries through war and then become a political party that leads the country. Both Rwanda and Eritrea have charismatic leaders who are ambivalent towards foreign aid and question the utility of western development paradigms. They are highly committed to nation-

building and national development through self-reliance. The leaders are rather strict with a strong sense of public duty and passionately stamp out corruption from its root.

Kaplan (2016) also mentioned that both Eritrea and Rwanda own similar economic models. Which are characterized by highly centralized decision-making models that give responsibility and leading roles to the state or party-led companies? The rents generated by these national companies are used for a long-term national development program rather than a short-term one that motivated corruption and personal gain. That is the unique character that makes them substantially different from the typical African and Middle Eastern model pattern where rent-seeking is extensive and difficult to control.

Rwanda's government took the opportunity of foreign aid advantage wisely. This foreign aid fund played a vital role and made the country focus more than the Eritrean government and helped Rwanda on building up its legitimacy via socio-economic development programs and the delivery of public services. Due to the border conflict and no war, no peace situation between Eritrea and Ethiopia Rwanda has outperformed Eritrean and performed better in a wide range of development strategies such as recruitment of experts at different sectors from abroad and the building of structured and strong civil services. That is why there is a belief that Rwanda can offer a lot of lessons and that Eritrea can learn a lot as well.

2.7. Foreign Aid

In this section, different concepts related to the history of foreign aid and the effectiveness of foreign aid that is further applied to the first-generation aid-growth literature, second-generation aid-growth literature, and third-generation literature are discussed in detail.

2.7.1 History of Foreign Aid

Foreign aid as now conceived is a product of the post-world war two eras. The two decades after World War II saw the emergence of independent nations from Europe's colonies mainly Asian and African countries. Motivated by the success of the Marshall Plan's aid in the reconstruction of Europe U.S.A. was the first nation to take the same action on supporting the newly emerging independent nations in the form of foreign aid. This aid was mainly provided to countries that had the development strategy to invest in the aid they received. The motives of the American foreign aid policy and programs were so complex that they stretched from being generous to selfish. As the security of the United States was the core of the congress president Truman started to focus and shift the American attention and resources toward the developing countries. The success of the United States and its allies aims to expand trade and investment in addition to the promotion of aid. It was believed that

the development generated by this alliance would provide security and economic interests by minimizing instability and providing emerging countries a stake in the capitalist global order. The United States aid policy was intended to encourage the new countries to sustain or implement democratic political institutions and private-enterprise-based economies in the United States' image (Gillis et al., 1996).

In the world of the neoclassical growth model, the contribution of aid and other foreign saving to development can be measured. Based on the model the role of foreign savings of all kinds is to increase domestic savings and increase investment at the same time to accelerate growth. In countries like Ethiopia, Mali, Tanzania, and Egypt foreign saving is a huge fraction of their GDP and it contributes more than 2.5% of the growth rate in the simple neoclassical world. While in countries like Brazil, India, Mexico, China, and Indonesia foreign saving is a small fraction of GDP and could play a very low role in growth. Gillis et al (1996) mentioned that there is no strong correlation across nations that are aid recipients as a share of their GNP and economic growth; this indicates the limitations of the neoclassical model. Developing countries have shortages of some significant complementary inputs that support development. These can be mentioned as human skills, administrative capacity, infrastructure, economic institutions, and political stability. With the lack of these complementary inputs, it is hard to stimulate growth even if you own a high saving rate. This is not the only case “some economists have argued that foreign aid may not contribute much to additional saving or imports, but could be used instead to finance higher consumption to reduce export” (Gillis et al., 1996:399).

Growth failure was more evident in Latin American countries and Africa where neo-liberal programs were practiced more than in Asian countries. In the years the 1960s -1970s Latin American per capita income was growing at 3.1% annually and Brazil's economic growth pace was similar to the Asian miracle. However, when the Latin American countries started to implement neo-liberalism the countries' growth rate declined to one-third of the previous rate. During the 1990s the growth rate was half of the previous one which is (3.1% to 1.7%). From the years 2000 to 2005, the growth was at its worst pace at which the capita income growth was at 0.6% per year. In the case of Africa per capita income grew slowly in the range of 1-2% per year in the 1960s and 1970s. Since the 1980s African countries have seen a fall in their standard of living. This record is a strong reflection of the neo-liberal orthodoxy because the majority of the African economies have been operated by the IMF and the World Bank in the past (Chang, 2008).

Most of the global economic activity was determined by the rich countries and they account for around 80% of the global output and around 70% of the international trade. This

indicated that their domestic policies have a strong influence on the global economy. That is why they tried to force the poorer countries to implement particular policies by making them a condition for their foreign aid or by presenting preferential trade agreements in response to good behavior which is the adoption of neo-liberal policies (Chang 2008). The multilateral organizations like IMF, World Bank, and World Trade Organization which are run by rich countries played a vital role in setting policies and shaping options for developing countries. The making up of the IMF was to lend money to countries in payment balance crises to reduce their balance of payments deficits without having to resort to deflation. While the World Bank was set up on supporting the reconstruction of the war-torn countries in Europe and the economic development of the post-colonial societies they officially named it the International Bank for Reconstruction and Development. This was supposed to be applied by financially supporting products related to infrastructural development such as roads, bridge dams, and others.

With the 3rd world debt crisis of 1982, the task of the IMF and World Bank changed dramatically, and introduced a new policy called structural adjustment programs. These programs dig deeply into all areas of the economic policies of developing countries. They started to put their hands on areas of government budgets, industrial regulations, privatization, agricultural pricing, labor market regulation, and others, By the 1990s they brought the concept of governance conditionality to the loan they provided and they started to intervene in unthinkable areas like democracy, government decentralization, central bank independence, and corporate governance. The World Bank and IMF started to argue that they have to go further and intervene in areas outside of their original mandate and impose conditionality on everything starting from fertility, decisions, ethnic integrations, and gender equality to cultural values to assess the loan or aid recipient country's economic performance (Chang 2008).

2.7.2 Effectiveness of foreign aid

Even though Sub-Saharan Africa (SSA) is endowed with a vast amount of natural resources the economy of the region is generally suffering from a lack of resources management. The level of saving in SSA needed to increase capital investment (human and physical) significantly for economic growth, which is a very difficult fact in the region to achieve. This gap can be filled with the support of foreign capital however due to the lack of the desired social, economic, and political environment that is needed to attract foreign direct investment by the majority of SSA countries the only means that guarantee foreign capital is foreign aid.

Foreign aid is also known as official development assistance (ODA), which is the transfer of resources in the form of grants and loans which could be donated either from rich governments, private foundations, or non-governmental agencies to developing nations. ODA is classified either in the form of project-based lending, sector-wide approaches, or in the form of general budget support (Balcilar, Tokar, and Godwin, 2020).

As was indicated historically the supply of foreign aid to Sub-Saharan Africa has been conquered by the Organization of Economic Cooperation and Development (OECD) countries mainly with the support of the Development Assistance Committee (DAC). The entry of new, none traditional donor nationals known as emerging donors that include countries like Brazil, India, China, Korea, Thailand, South Africa, Malaysia, Turkey, some Middle Eastern countries, and the commonwealth of independent states (CIS) took place on the previous thirty years (Chapponniere 2009). China is recognized as the largest foreign aid contributor to Africa among the new emerging aid donors (Woods 2008). The formation of the China-Africa Cooperation (FOCAC) forum in 2000, makes China one of the major aid contributors to SSA. With the support of FOCAC in 2018, China promised to donate financial support which is around 60 billion U.S dollars to African nations (Balcilar, Tokar, and Godwin, 2020)

The increasing significance of emerging aid contributors mainly China opened the gate to debating on the importance of foreign aid. The existence and active participation of China in the African economy in recent years are playing a big role in the debate to find out the nature and effect of Chinese foreign aid to Africa. The renewed interest in the aid effectiveness literature is also tied to pressure imposed on donor nations to increase foreign aid by the founding of the Millennium Development Goals (MDGs) in 2000 (Maruta and Cavoli 2017). The 2030 program and the sustainable development goals (SDGs) are currently planned as a prospect to re-establish the aid effectiveness agenda and call for further studies into the aid-growth series.

An evaluation of the present studies on aid effectiveness initially shows that the findings vary based on the approach used. Micro-level studies based on cost-benefit analysis however unanimously agree on the effectiveness of foreign aid, while macro-level studies produce ambiguous results (Moreira 2005). This contradiction is commonly referred to as the micro-macro paradox (Mosley 1986). Many researchers question the effectiveness of foreign aid and argue against increasing it and demanding a better option. Rajan and Subramanian (2005), Oya (2006), Easterly (2007), Doucouliagos and Paldam (2009) and Derher and Langlotz (2017) assert that aid is growth natural. Knack (2001), Bobba and Powell (2007), and Djankov, Montalvo, and Reynal-Querol (2008) even argue that foreign aid is not only

ineffective but also growth depressing. They insist that aid is damaging the recipient countries' institutions as it motivates corruption and encourages dependence. On the other hand, Clemens et al, (2012) and Arndt, Jones, and Trap (2015) believed that unconditional foreign aid had positive economic growth. Some researchers with a conservative position assumed that foreign aid under specific conditionality encourages economic growth (Burnside and Dollar 2000).

Regarding the conditional requirement for foreign aid effectiveness, the institutional quality of the recipient countries was regarded as a crucial aspect. Degenbol-Martinussen and Engberg-Pedersen (2003), indicated that the good quality institutions and efficient administrative and judicial organization of the European nations contributed a crucial role in the success of the Marshall plan. On the other hand, the current evidence proposes that foreign aid is damaging the quality of institutions in recipient countries (Knack 2001; Rajan and Subramanian 2005; Djankov, Montalvo, and Reynal-Querol 2008).

(Balcilar, Tokar and Godwin, 2020) mentioned that foreign aid raises some concerns. The first concern is that it may cause harm to the very institutions with the ability to make it succeed. While the second concern is that if foreign aid is truly detrimental to institutional quality then it can lower the growth impact of institutional quality indirectly because institutional quality is a determinant of economic growth.

The narrative on the effectiveness of foreign aid has passed through three different stages which are known as the first, second, and third generations. The effectiveness of aid in every generation was dictated by the underlying theory, objectives, development models data, and equipment available at the historical moment (Thorbecke 2000). The following section discusses the three stages of the effectiveness of foreign aid.

2.7.2.1 The first generation aid growth literature

The 1960s and 1970s which are known as the first generation aid growth literature revolved around the saving-investment gap that deals with the effectiveness of saving in economic growth. In this stage, it was argued that poor countries are short on the ability to be at the level of saving desired to attain the investment rate that can encourage growth (Easterly 1999; Hjertholm, Laursen, and White 2000). Hanson and Tarp (2000) indicated that at that time there was a belief that aid flow increased capital stock in a one-to-one ratio with not any of it going to consumption. Even at a time there was an agreement foreign aid positively impacted economic growth. On the other hand, there was an argument that said aid might be displacing domestic savings (Haavelmo 1965; Giffin and Enos 1970).

2.7.2.2 The second-generation aid-growth literature

The second-generation aid-growth literature puts attention to the direct relationship that exists between aid and growth. The study finds out that both the first and second-generation studies shared common characteristics related to the growth models used and the usefulness attached to capital accumulation as a source of economic growth (Vathis 2013). Research in this generation also finds out that there is no consensus on the growth impact of aid. Hanson and Tarp (2000) believed that aid drives investment while Mosley, Hudson, and Horrell believed the opposite.

2.7.2.3 The third-generation literature

The third generation literature that deals with aid growth are characterized by applying new data and methodologies, the augmentation of the traditional growth models that include factors like policies and institutions, and introducing new approaches to modelling endogeneity and non-linearity in aid analysis (Hanson and Tarp 2000, Vathis 2013). Research conducted in this generation lacks a clear answer to the term that aid was effective in generating economic growth.

Based on their finding of (Balcilar, Tokar, and Godwin, 2020) aid-empirical literature was classified into four sections. The finding of the first section of literature indicates that foreign aid has no significant effect on growth so aid is considered as growth-Neutra. Bone (1996) highlighted that aid neither benefits the poor nor increases investment. Ragan and Subramanian (2005) didn't discover any evidence that indicates there is a positive or negative relationship between aid and growth. on the other hand, Doucouliagos and Paldam (2009) concluded that aid is not effective because they didn't find any significant effect of aid on economic growth. Similarly, Dreher and Langlotz (2017) didn't find any significant relationship between aid and economic growth.

The second section of the literature view was more pessimistic about aid effectiveness by arguing that in addition to being ineffective aid also increases depression. This tells that aid aggravates corruption, civil conflicts, and dependency, it also minimizes the domestic production of the aid-dependent country. For instance, Knack (2001) proposes that aid will undermine the institutional quality of a country that depends on aid by reducing its accountability and motivating corruption and rent-seeking manners. Djankov, Montalvo, and Reynal-Querol (2008) also acknowledged the same conclusion in their study where aid is the source of a windfall of resources that encourages rent-seeking behavior which is the same

as natural resources courses. Oya's (2006) argument indicated that "donor-recipient relationships have left scarce policy space to recipient governments to formulate innovative trade, agricultural and industrial policies. Moyo (2009), argues that African countries are poor precisely because of all the aid they receive" (Balcilar, Tokar, and Godwin, 2020).

Based on the findings of third strand literature indicates that aid is unconditionally growth-enhancing. Clemens et al, (2012) stressed that the increase in aid was followed by an increase in both investment and growth. This shows that to some extent aid has a positive impact on the economic growth of the recipient countries. Arndt, Jones, and Tarp (2015) looked broadly at the scope of aid effectiveness literature by including the proximate source of growth, social welfare indicators, and economic transformation measures and concluded that the long-run cumulative result of aid is positive. Galiani et al. (2016) found that aid has an optimistic statistically significant and economically sizable effect on economic growth. Mekasha and Tarp (2013, 2018) by implementing the combination of meta-analysis, funnel plots, and regression-based tests, confirm the positive impact of aid on economic growth.

The fourth section of literature belongs to those who are in the intermediate position. They believed that aid can be effective only if it is implemented under certain conditions. Burnside and Dollar (200, 2004) find that under a good policy environment the effectiveness of aid towards economic growth is positive. The same conclusion was reached by Collier and Dehn (2001) and Collier and Dollar (2004). According to Durbarry, Gemmell, and Greenaway (1988), Burnside and Dollar (2000) Whitaker (2006), and Abuzeid (2009), the quality of institutions is decisive in aid performance; therefore it was clear that the effectiveness of aid in public institutions with high-quality is positive.

The role of foreign aid in developing countries has become a matter of heated debate among economic development experts in the past. The United Nations Millennium Declaration identifies that foreign aid, better termed Official Development Assistance (ODA), is a necessary and complementary source of finance for better development and achieving the MDGs. According to (OECD) Organization for Economic Cooperation and Development, ODA is defined as government aid designed to promote the economic development and welfare of developing countries. The foundation of this external finance is in the form of bilateral grants, loans, food aid, emergency relief, technical assistance, financing for construction projects, as well as multilateral flows." The fundamental contribution that foreign aid can bring to the recipient country is economic growth and development, which in turn can reduce poverty, however despite being the biggest beneficiary of aid with the highest ODA per capita, it appears that foreign aid has not produced the expected effects in Sub-Saharan Africa" (Tang and Bundhoo 2017: nd). Data obtained from the World Development Indicators

Database and the Human Development Report (2013) demonstrate that the ten largest aid recipients countries in SSA specifically Ethiopia, The Democratic Republic of Congo, Tanzania, Kenya, Côte d'Ivoire, Mozambique, Nigeria, Ghana, Uganda, and Malawi are known with their high level of poverty and low income.

Being a habitat to a large part of the global “bottom billion” SSA has attracted a significant amount of foreign aid in the past 50 years. Starting from 1980 13 Sub-Saharan African countries accepted a net aid that quantified above 10% of their GDP (Collier, 2007). In 1990 the figure was more than twice of the 1980s and 30 countries have access to aid (IDA 2007). In 1998 21 nations received aid at the same level. In countries like Zambia, Malawi, and Ghana aid is considered their main source of income and covers more than 40% of the respective countries' government expenditures, and this runs almost for two decades (Abuzeid 2009).

In the last half, a century period SSA countries received foreign aid that staggered one trillion American dollars (Kasper 2006). The history of foreign aid is proof that Sub-Saharan Africa's “big push” paradigm is not effective; it does not work at all in the real world. The record indicated the failure of foreign aid in bringing any significant change. The western countries contributed around 600 billion in the form of foreign aid to Africa between the 1960s and 2000 (Akonor, 2000; Easterly, 2005). Despite being awarded a huge amount of foreign aid due to the conditions imposed by the donor countries African countries' rank is very low and most of them are in the bottom position based on standard international comparisons. For instance, African countries' status is at the bottom in terms of income per capita, percent of the population living in extreme poverty, life expectancy, infant mortality, literacy, and other international indicators of development (GebreMichael, 2016). Eritrea as a Sub-Saharan Africa the country believes that if the aid donor countries or organizations are not able to accept and adopt the Eritrean developmental programmes it is very hard to speak in issues related to work as partners. All members of the Eritrean government leadership reflect and shared the same view when dealing with international donors and they mentioned that the conditionality' which were imposed by aid donors as annoying (Hirt and Mohammad 2021).

2.8 Aid Dependency Theory

Sunkel (1969) said that dependency is the economic development of a state where the national development policies of the nation depend on external influences. Dos Santos (1971) indicates dependency as a system that shapes a certain formation of the global economy and favours certain countries at the price of others that limiting the chance of

development of the subordinate economies. Dependency theory is expressed in reality that resources shift or flow from the poor to the rich which means the flow is from the periphery to the core. This flow of resources will make the core richer while the periphery will be poor (Kabonga 2016).

Narratives on dependency theory advocate that the core countries own the potential to dictate the periphery or poor countries and make them dependent forever. This tactic was achieved by implementing different techniques which could be either political or economical interventions. In the 1950s when dependency theory emerged colonization still existed in the poor countries, as a result, the rich countries used their power to control the poorer countries politically. As the periphery nations in Africa are under the control of the core dependency was well-established, and the flow of resources from poor to rich was practiced continuously. The economic technique the colonizers used to control the poor is modeling them as resource extractive hubs (Kabonga 2016).

According to dependency theory, the developed countries exploit the poorer countries' resources and they gain a lot of wealth which helps the richer countries to sustain a high standard of living. Based on the argument made by Rodney (1972) colonization does not represent only exploitation but also represents the repatriation of profits to the homeland. The war for independence in Africa stands by the idea and supports the wealthy countries and wants them to have a hold on the poor countries. By any chance, if there is an attempt to distract the uneven relationship that perceives the poor countries are the source of resources to the wealthy nations it is an indication of the counter to resistance. The developed countries continuously depend on their military superiority to keep the status quo; this is the uneven integration of the developing countries in the global system. At the moment the developed countries use their domination of the media, donor aid, and educational systems to maintain control and supremacy over developing countries.

The argument of Matunhu (2011) supports that currently, African countries are politically, economically, and socially dependent on Europe and the USA which donate an overwhelming amount of money to African countries as aid. The aid was increasing from year to year. In the 1960s it was six billion dollars in 2011 it was around 46 billion dollars (Kabonga 2015). The Organization for Economic Cooperation and Development (OECD) (2011) remarks that Africa is the continent that received the largest portion of the Official Development Assistance which is in the region of 28 billion dollars, which means that the majority of African countries depend on the aid contributed by the donor countries. Kabonga (2016) indicates that the source of half the budget of Malawi, Nigeria, Rwanda, and Tanzania is the aid received from the donor countries.

Paradoxically the donor countries are more beneficiaries of the aid than the recipient countries by giving severe conditionality (Stevenson 2006). The case of Zimbabwe is a perfect example where USAID provided 15 billion US dollars as an aid in 2005. The aim was to combat HIV and AIDS with the support of its Presidential Emergency Plan for Aids Relief (PEPFAR). The aid in the form of money had indescribable strings and conditionality associated with it (Gukumure 2012). NGOs as suppliers of aid contributors have the upper hand over hiring expatriates who received a staggering amount of money as wages. In this approach, the aid is going back to the donor country. Conditionality is that the recipient country has to buy goods and services from the aid donor. Moyo (2009) concludes by saying that such aid is tied-tied to procurement.

Kabonga (2016) articulated the concept of the dependency speech which is called “development of underdevelopment” this concept of the development of underdevelopment is premised on the dialogue that the present underdevelopment all-encompassing our globe today is the historic outcome of the previous relations and the existing economic and various other relations among the core which are the developed countries and the periphery which are the under developing countries. At the moment aid is serving as the main tool for developing underdevelopment in the developing countries as it is laminated with a string of conditionality’s and it generates extra demand for employment, service, and goods in the developed countries rather than the developing countries. It is easy for someone to consider that aid is equipment for the development of underdevelopment and the quagmire situation of African and other poor countries will deepen as long as they continue to receive skewed aid from the developed nations.

In terms of Eritrea at the beginning of 1990s, expectation towards Eritrea was high and was considered as an inspiration of hope (Ottawa, 1999), and international donors were ready to accept and follow to the needs of the leadership. For instance, The UNDP (United Nations Development Program) (1997) stated that “Eritrea had an excellent track record in program execution and financial accountability” (Hirt and Mohammad 2021:26).

Contradictory to that, the Eritrean government had reservations by indicating that the European Union’s aid was tied under many conditions. Hirt and Mohammad (2021:26) mentioned that in 1994, the Eritrean President, President Isaias Afwerki informed a German journalist by saying that: “Our relations with the European Union have suffered from its conventional approach, from its conditionality. If the EU is not able to adapt to our programmes, we cannot talk about partnership” (epd Entwicklungspolitik,9/1998). All members of Eritrean government leadership reflect the same view when dealing with

international donors and they mentioned that the conditionality' which were imposed by aid donors as annoying (Hirt and Mohammad 2021).

2.9 Agro-industrial Theory

According to FAO (1997), "the agro-industrial sector is here defined as the subset of the manufacturing sector that processes raw materials and intermediate products derived from agriculture, fisheries, and forestry. Thus the agro-industrial sector is taken to include manufacturers of food, beverages and tobacco, textiles and clothing, wood products and furniture, paper, paper products, and printing, and rubber and rubber products" (Reardon and Barrett, 2000: 11). On the other hand, agro-industry forms a portion of the broader concept of agribusiness that includes suppliers of inputs to the agricultural, fishers, and forestry sectors and distributors of food and non-food out-puts from agro-industry.

Andinet (2017:4) defined agro-industry as "post-harvest activities involving the transformation, preservation, and preparation of agricultural production for intermediary or final consumption. It comprised of artisanal, minimally processed and packaged agricultural raw materials, the processing of intermediate goods and the fabrication of final products derived from agriculture". In addition to this activities related to the distribution and trading of the products are also included in an extended definition of agro-industry. The most common sectors within the agro-industry sector are food-processing and beverages which are more than 50% of the agro-industry in low and middle-income nations. In some sub-Saharan countries like Senegal, Eritrea, and Ethiopia the food and beverage industries account for above 70% of the agro-industry value-added and 30 to 50 percent of the aggregate manufacturing sectors (Andinet 2017). According to sustainable economic growth studies, nations implement agro-industry primarily to boost food security and the people will have a balanced diet. Second Agro-industry plays a vital role in generating employment opportunities that leads to the improvement of an individual's income and poverty alleviation via transforming the quality of life of the community.

Since the beginning of the 1990s, there has been a speedy procedure of developing agro-industrialization in many developing countries which is associated with the establishment of private and formal sector firms all around the increasing range of food and non-food sectors. To have a clear image of the evolution of agro-industrialization (Reardon 2007) mentioned three broad contexts that can bring change to the agribusiness complex. The first change in demand is the growth of agro-processing, distribution, and agricultural input provision activities off-farm by agro-industrial firms. The second change in need is the existing

institutional or organizational relations between the agro-industrial firms and the producers. The third section indicates the changes in the primary production section which deals with the product composition, technology, sectoral and market structures, and others (Reardon and Barrett, 2000).

The majority of the developing countries are transforming their agriculture firm to modern agro-industrial forms and in some cases; it was run by foreign direct investment (FDI), which is owned by multinational corporations. Most of the investment was through the acquisition of active domestic companies in the form of joint ventures or building new investment enterprises. The continuous flow of foreign direct investment to developing countries supports not only the easing of capital constraints on the route to industrialization (Reardon and Barrett, 2000) but also played a vital role in facilitating the flow of new technologies and management practices and it cleared up competent paths towards organizational and institutional change. The emergence of agro-industrial leads to the change in the modes of management from simple coordination of product flows, management of processing mechanisms, and transfer of ownership, to a new technique of implementing a close and familiar mechanism of production, and it also increasingly improves the supply chain period of processing and distribution both nationally and internationally. In this case, the domestic-based firms have the chance to acquire the newly emerging skills and technology to assure their existence and be competitive in the new market otherwise they will be expelled from the market (Reardon and Barrett, 2000).

Thirlwall and Pacheco-Lopez (2017) indicated that in developing countries agriculture is the most neglected sector of the economy and they mentioned that the governments of these countries underestimated the agricultural sectors and favor the industrial sector instead. The contribution of agriculture to the economic development of a nation is vital. Thirlwall and Pacheco-Lopez (2017) also stated four contributions of agriculture towards economic development which are product contribution factor contribution, market contribution, and foreign exchange contribution. Thirlwall and Pacheco-Lopez (2017) also point out that both industry and agriculture are strongly complimentary to each other practically the destinies of the two sectors are closely intermingled. In this case, the expansion of industry plays a vital role in the improvement of agricultural productivity as the agricultural sector must have the potential to produce enough amounts of supplies of industrial input.

The consensus shows that the performance of Africa's agriculture is at its lowest stage and manufacturing contribution in terms of value added and employment is very low, while the service sector's service is mainly limited to the domestic consumers. As a result, there is a strong belief that Africa has to transform its economic structure to attain growth. With the

executing of an accurate policy and enhancing a convinced environment agro-industry has the potential to generate promising products from the agriculture, manufacturing, and service sectors. Based on this agro-industry boosts the value addition in GDP and improves the global value chain and it creates job opportunities that increase income, it also promotes food security that improves nutrition, and built healthier and productive manpower that plays a vital role in alleviating poverty (Andinet 2017).

UNCTAD (2017) reported that as a continent Africa is known as a net food importer. Based on the agricultural potential of the continent it is very hard to believe. The agricultural activity in the continent is mainly dominated by smallholder production for delivering food. Crop harvesting and livestock farming are the main activities practiced by the rural communities in Sub-Saharan Africa and around 57% of the continent's population depend on agricultural activity for survival (ILOSTAT 2018).

Conventional development thinking scholars reject Africa's smallholder agricultural activity and describe it as inefficient and out of date. However, the Conventional development thinkers accept agro-industrialization as the path that can secure rural development and food security. According to Hamann (2018), agro-industrialization was stated as the "application of industrial techniques of standardization, simplification, and intensification in agro-ecosystems to realize economies of scale in farming" (Haman 2020: 1406), this is mainly endorsed by those who supported and accepted the western style of economic growth and inspired by the idea of market-liberalism and agricultural modernization. With the help of greater specialization and economies of scale Africa has the opportunity to escape food insecurity and poverty by investing in agriculture and depending on exporting both edible and inedible crops that can generate foreign currency that helps on attaining the desired income (Adenle, Manning and Azadi 2017, Bumenthal 2013; Bayerlee, Garcia, Giertz and Palmade 2013). The repeated expansion of large-scale land acquisition by private organizations for the cultivation of food and bio-fuel crops is one of the common indicators that showed agricultural activities are shifted towards industrialization. As these kinds of land deals are common however they started to attract more attention by the late 2000s with the global shifting to the modern-day "land rush" (Cotula 2013; Kugelman 2013). According to Land Matrix reports more than 20 million hectares of land were affected by agricultural land deals in Africa between 2000 and 2018. Even though the land grab in Africa was larger than the total land deals run in the same period in America, Asia and Oceania the majority of the deal is aimed at growing non-food products related to industrial inputs like cotton. Tobacco, rubber, fuel crops, livestock feed, floriculture, and others account for more than 2/3rd of the total land acquisitions (Land Matrix 2019).

Critical scholars who are attracted by dependency theory and post-development ideology supporters are anti-agro-industrial expansion. These scholars argue that the corporate farming model delivers a devastating loss of land resources, harms and changes rural livelihood, and ultimately hinders development (Anseeuw, Cotula, & Taylor, 2013; Ferguson, 2006). These scholars tried to clarify large-scale land acquisition as “land grabs “which is planned for an extractive reason and capital accumulation. It was also indicated that members of this theoretical concept give more attention to the evolution and the impact of the global food regime. The food regime analysis is a concept that deals with the politics of food relations and the way how food chain joins and transforms the global economy through com-modification (Friedmann and McMichael 1989; McMichael 2013). According to Hamann (2020), modern scholars in the field expressed the emergence of the corporate food regime and its impact on agrarian transformation. Due to the outcome of the dominance of neoliberal globalization the new food regime is dominated by transnational companies as the sole owners of global food production, processing, trading, and distribution (Akram-Lodhi 201, Clapp & Fuchs 2009).

Barnsten (2010) indicated that “Neo-Marxist approaches analyze advocated the rural development and agrarian change with an emphasis on class dynamics and the fundamental social relations of capital and labour” (*Haman 2020:1407*). Based on this evaluation the process of monopolization within the current agri-food system has a great impact on the global peasantry through depeasantization and proletarianization which leads to the prohibition of the peasants from practicing their traditional activities and the making of the working class society in the rural communities (Bryceson, Kay and Mooji 2000; McMichael 2012,2013). The different contradictions surrounding the modern food system lead to the emergence of a new food sovereignty counter-movement. The food sovereignty counter-movement echoes the reforming of the global agro-food structure to overturn the peasants’ displacement, dispossession, and the practicing of agricultural intensification and apply the model of self-sufficiency and sustainability in food production (Shivaa 2000, Wittman, Desmarais and Wiebe 2010).

The critical development studies and critical globalization studies identified the negative impact of industrialization and co-modification activities in the agricultural industry within its socio-economic and environmental consequences. Critical globalization studies look at these issues from top-down perspectives by putting more emphasis on the global exchange dynamics and international institutions like the World Trade Organization (Appelbaum and Robinson 2005). On the other hand, critical development study thinkers’ attention was based on a bottom-up perspective by putting the local analysis and community-level implications as their focal points. Based on the present kinds of literature on the global food system and

agro-industrialization techniques, both the critical development and global development studies regularly indicate complementary approaches and they present a crucial critique of capitalism concept and its impact.

The critical case studies have a concern on land acquisitions and their dissatisfaction on it was growing massively within the past decades, sub-Saharan Africa states of governance dynamics are rarely under the radar of such analysis. Based on research conducted in the fields of land governance, labor governance or agro-food governance repeatedly focuses mainly on the role of corporate power, international institutions, and neo-liberalism on the other hand describing the state agency as relatively weak and inefficient (Alden Wily 2011, Bernards 2015 Greenberg 2017).

Differently the Eritrean government is working hard on increasing agricultural production with the collaboration of different institutions. As the Eritrean government's key strategy is to reduce the dependence of rain-fed agricultural activities and practice modern agricultural system that can increase agricultural productivity and adopt a mechanism that can overcome the effect of climate change. To ensure the success of the program the government constructed many dams, ponds and other water reservoirs aiming to secure the availability of water which can be used for agricultural activity or household consumption (Ministry of Finance and National Development (2021)).

Chapter Three

Literature Review (part 2)

3.1 Introduction

This chapter deals with the literature review that played a vital role in giving an important image to the reader of the paper and its historical development. The chapter is constructed depending on the existing studies which are conducted by different scholars and reports from different organizations that deal with food, and water security, scientific debate on food security, the global food crisis food security models and other themes related to the topic

3.2 Food Security

Different authors or organizations explained or defined the term food security in different ways. Berck (1993) point out that “food security requires the supply of an adequate amount of food so as to meet the nutritional needs of the people at all the time (Rena 2004). Rena (2004) farther explained that a nation and its people will be food secured once their food system started to operate efficiently to get rid of the fear that said there will not be sufficient amount of food to feed the people. It was also stated that food security will be assured when the poor and vulnerable individuals mainly women, children and those who lived in a marginal areas are secured to have access to the food they deserved to have. On the other side it was indicated that food security will be achieved when equitable economic growth granted that these groups of the society own a sustainable source of revenue in the meantime in addition to that food security demands an equitable and efficient operations of food system (Millor 1998). It was also believed that to have an active and healthy life food security needs to be accessible to all at all time. This indicates that both demand of food which is (access) and the supply (availability) plays a great role on food security that is why the food insecurity the outcome of “the lack of access to enough food” (World Bank 1986).

According to FAO (1999) “food security is about ensuring that all people at all time have both physical and economic access to that basic food they need” (Rena 2004:5). FAO (1999) also identified three main objectives of food security which are:

- Ensuring the production of adequate food supply

- Maximizing stability in the flow of supplies
- Securing access to available supplies on the parts of those who need them.

The Committee of World Food Security recognize food security as a concept that shared three principles together which are the principles of availability, access and stability. The OECD also identified that food security consist of three dimensions which are availability, access and utilization (FAO 2003). Based on the national policy of Eritrea the Eritrean Macro-policy of 1994 indicated that “food security refers to the existence of the capacity and ability to make readily accessible to all Eritreans, food of sufficient quantity and acceptable quality at an affordable price at any time and place within the country (Eritrean Macro-policy 1994).

According to Macro-policy Eritrea (1994) it was stated that Eritrea’s rainfall is scant and erratic and the flow of rivers in the country are not static fluctuation and the changing of the water capacity the rivers carried year after year are common futures. It was believed that the combination of different factors such as climate change, topographic and geological futures of the country in relation to human activities of deforestation and war played a vital role on bringing chronic scarcity of water for human consumption and for both commercial and industrial purposes, that is why it was documented that only 25% of the Eritrean population have access to clean and safe water.

In recent years significant progress has been attained on the reduction of poverty and increasing the agricultural production and its productivity that ensured food and nutrition security. It is hard to achieve both food and nutrition security with the existence of food supply gaps that does not cause hunger. According to the report obtained from the Ministry of Finance and National Development (2021) stated that “although comprehensive end data are unavailable the proportions of poor people and those suffering from food insecurity in the country are believed to have declined subsequently since independence 1991” (Ministry of Finance and National Development 2021:48).

The Eritrean government’s key strategy is to reduce the dependence of rain fed agricultural activities and practice modern agricultural techniques that can increase agricultural productivity and adopt a mechanism that can overcome the effect of climate change. To ensure the success of the program the government constructed a large number of dams, ponds and other water reservoirs aiming to secure the availability of water which can be used for agricultural activity or household consumption.

Achieving food security is not an easy agenda and the Ministry of Agriculture demonstrated different programs and initiatives to support farmers to increase their agricultural productivity

and output that includes “water harvesting, increasing arable land, introducing better seeds, applying more efficient farming techniques containing soil erosion, applying environmental and health friendly fertilizers and pesticides, and providing household income supplementing packages” (Ministry of Finance and National Development, 2021:48).in addition to this technical expertise from different institutions including the ministry of agriculture and the Collage of Agriculture at Hamelmalo also carry out a regular consultations and trainings to farmers and communities in all parts of the country (Ministry of Finance and National Development 2021).

3.3Theories on Development and Food Security

Miescher and Tsikata (n-d) defined Modernization as a situation where a newly emerging nation embraces the process of rapid industrialization and electrification. The infrastructural investment in constructing mega-dams was accepted as a guaranteed means that accelerates the achievement of modernization objectives. Some social science expertise gives a teleological theory to express a series of socioeconomic changes that explains the changing of the older way of life to a new or modern way of life. According to Miescher and Tsikata (n-d), Teleological theorists trusted that modernity owns a” package” “to be reached through a series of transitions: from subsistence economies to industrialized economies, from subject to participant political cultures, from extended to nuclear kinship units, from religious to secular ideologies” (Tipps 1973: 204). These transitions were criticized by many modernization theorists as some of them trusted that the course was not following the European ideology which was charted in the 19th Century.

Starting from the 1970s the theory of modernization was criticized by many scholars. Dean Tipps rejected the concept based on empirical grounds by indicating that it is too “vague, diffuse, descriptive and ultimately non-comparable” (1973:223). On the other side, there was criticism of the American style of modernization theorists due to their wrong path to modernity. World system theorists condemn the theory of modernization because it gives more emphasis to the core which is the Western world’s decision-making institutions and ignores the periphery (Amin 1976). On the African side, scholars criticized it by insisting that all the promises of the modernization theory were a failure like a fairy tale (Ferguson 1999). Practically since their independence majority of the African countries, policymakers, politicians, and famous authors' expectation of the notion of modernization was very bright when planning their goals and objectives for building their newly emerging country (González, 2010). However, in the real arena, it doesn’t work at all and most of the Sub-Saharan countries are still in the lowest stage of development.

3.4 Scientific Debate on Food Security

Starting from the day of its acceptance by FAO the concept of food security has been defined in more than two hundred ways (Smith et al., 1992), and this has led to a repeated debate among experts and researchers. Maxwell (1996) mentioned that the source of the ambiguities and controversies evolve from the various scientific disciplines and analytical criteria that tried to study the complexity and various food and agricultural conditions of the world and the various mechanisms that study the world's food insecurity experience. Mechlem (2004) expressed that by the 1970s the idea of food security was highlighted based on the demand for a secured and permanent supply of food products that satisfied the continuous population growth and be sure to deal with the annual fluctuation of food price and price instabilities of the global market. This context tried to look at the agricultural crises that occurred due to the production slowdown and the high price of food products in the 1970s. This shortage of agricultural products leads to the dilemma of hunger and it leads to a difficult situation that is hard to control with the continuous population growth. The sole solution mentioned at that time was the production of more food through the introduction of advanced technology (Falcon and Naylor 2005).

In the 1980s Amartya Sen mentioned that despite the availability of food in stock is sufficient the crisis of food insecurity and famine is a common phenomenon. In the 1980s Sen also expressed the situation where there was a continuous availability of food supply however hunger and poverty can be widespread due to the lack of access to food. This concept pushes FAO to look on away and make a guarantee on the supply of food products and make it easily accessible to all those who are in demand of its access (Mechlem, 2004). Different studies indicated that there is no equal access to food for individual members of the same household. The most vulnerable members of the household are the elders, women, and children this is due to the power adult men used in the process of food production and household income generation (Mechlem 2004).

Due to the enormous scientific debate on food and agriculture in the past various proposals with different views related to food security were made. Some of the views contain antagonistic proposals and the elite at the FAO decided to design food policies on a global scale. Gonzalez (2010:1347) mentioned on the political-ideological debate concept "we should not forget that in this process the FAO itself is an institution that has to legitimize its authority before national government; neither should we fail to cons other worldwide institutions that affect agriculture and food. Such is the case of multinational food corporations, world trade financial institutions, and non-governmental organizations, which

assume the role of a world civil society". The analysis of FAO's policies and the justification regime practiced for adopting policies is based on political ideology rather than scientific procedure.

It was believed that the FAO'S bureaucracy who has the responsibility for designing and evaluating policies related to the development and its problems finds it difficult to reject any proposal imposed by those institutions, governments, and other organizational groups who own economic and political power. According to Grindle (1986) development ideology was defined as "scientific postulates chosen by the policymakers to define and justify objectives, strategies, instruments, and mechanisms for evaluating policies, and explain the benefits that will supposedly, be gained through the implementation of the policies- a justification that is called for especially when their application covers or leaves out the interests of specific sectors or groups of the population - and to excuse the results, when these turn out to be unsatisfactory" (Gonzalez 2004, 2005).

Gonzalez (2010) identified that policy criticism could be due to the bureaucratic elite's own development ideology where the arguments deal with inconsistencies and errors or it could be because of the newly emerged points that open the gate for the introduction of new ideas for discussion and they invite for reviewing the consistency and validity of the proposals imposed by the elites. Globally there is a debate on the field of food policies and ideologies imposed by FAO. Even though the argument was scientifically the discussion and debate it generates are more political and focused on various "institutional frameworks – with certain rules, procedures, and personnel – where the diverse and antagonistic economic and geopolitical interests of nations and blocs of nations fight it out" (Gonzalez 2010: 1348). Documents prepared by FAO avoid mentioning the political, historical, and economical aspects that lead to poverty (Pottier 1999). Based on the documents the problems of hunger and the technique of minimizing hunger are accepted as the responsibility of each country, based on the national governments which free the international community from taking any responsibility and FAO avoids accepting a critical position or opposing institutions like the World Bank and IMF who played a vital role on the development of global governance that shaped agricultural and food development all over the world (Pottier, 1997).

In the 1980s FAO and other international organizations introduced a radical change by imposing a new role that agriculture can have on the development of a country and clarifying the role of governments in the context of food security. In previous times agriculture was accepted as one of the "strategic sectors" that assure the survival of a country's population and its economic stability. The importance of economic stability is one of the major aspects because the rising in the price of food has a direct impact on the wages of workers and has

an effect on the national economy (Fritsccher 2004). The popular concept at that time was that “countries should be self-sufficient and guarantee an internal supply of food that would be independent of price fluctuations in the international market and would depend only marginally on food imports” (Fritscher 2004:115).

By the mid of 1980s, there was an emergence of a new development ideology related to agriculture and food and it stated that the world market should be the main guarantor of food security (Fritscher 2004). In this new development ideology, tariff barriers were seen as the main obstruction to motivating agricultural productivity and the declining food prices on the global market. At this time the concept of “food self-sufficiency” was replaced by the term “self-capacity” (Fritscher 2004). At that time a country has to have enough amount of foreign currency to be competitive on the world market and purchase enough amount of food to feed its people. With the introduction of this ideology, food security was accepted as a country’s macroeconomic variable and put less attention on food scarcity and the increasing prices of food however they put more attention on monitoring international markets fluctuation and the availability of domestic currency reserve the country owns.

The supremacy of the new development ideology becomes clear at the Summit of Rome in 1996 where the attention on basic food products was abandoned and they raised the issue of the global food problem and its origin. Following the Rome Summit, the United Nations organized a meeting to obtain assurance from national governments, private organizations, and non-governmental organizations to tackle the expanding crisis of hunger globally. Latter on the Millennium Summit was organized in New York and 191 governments attended the Summit. Poverty eradication by the year 2015 was one of the main objectives. However, when they revised it by 2002 instead of the expected reduction of hunger and poverty by 22 million in a year the reduction was 6 million per year which is below the objective, based on this pace the objective was expected to be achieved in 45 years late (FAO 2002).

At the moment dealing with food security has adopted a critical context towards neoliberal ideology and recommended public procedures that have the potential to transform agriculture and rural communities globally. Gonzalez (2010) revealed that the ideological-political debate exposed several misunderstandings between the developed north and the undeveloped south. (Bonnal et al., 2003) commented on two analytical proposals that match the present ideology and served the political agendas of different international organizations and countries. The first one is the multi-functionality of agriculture (MFA) which is developed in Europe the European Union used this study for defining the common agricultural policies and it was followed by countries like Norway, Sweden, Japan, and South Korea. While the second approach was developed in South America which is known as “New Rurality” (NR),

this approach got recognition from Latin American organizations which have a great influence on several South American countries' food and agricultural policies. NR has argued that opposing the neo-liberal ideology and policies followed by most South American governments resulted in the revising of the policies and seeking a new alternative (Echeverri and Ribero 2002; Sepulveda 2002; Llambi et al., 1994). NR emphasized adopting the system that reduces the available regional inequalities between different countries and the failure on achieving territorial developmental balance.

Another debate on food security emerges with the emergence of ethical justification when food started to be accepted as one of the basic human rights entities. The right to food was accepted as the right to a “decent standard of living” the same as the right to shelter, clothing and water. The Commission on Economic, Social, and Cultural Rights proposed the discussion on food security with the collaboration of FAO and indicated that “there is a right for everyone to have at all times physical and economic access to adequate quantities of adequate food and to the means of obtaining it” (World Conference of Human Rights 1993) “The right to food is based on human dignity and, like any other human right, is universal, indivisible and inseparable from the others (Committee on Economic, Social and Cultural Rights, 1999). Thus without regard to political and economic ideologies and systems and cultural particularities, States must respect, protect and provide the means that will guarantee this right for their populations” (Gonzalez 2010: 1350). The acknowledgment of food as one of the basic human rights aspects had resulted in a unanimous change in the attitude of national governments concerning their accountability for the global continuous starvation. The lack of readiness and commitment of the governments to the acceptance of food as a universal human right leads to strong criticism by those who proposed it and it becomes one of the main obstacles to attaining the desired goals on food security.

3.5 The Concepts of Food Security Sovereignty and the Nation-state

The decline in the total cultivated land resulted in the reduction of self-sufficiency and this increased the dependence on others for food. That is why agricultural land is considered the primary resource that played a vital role in national food sovereignty. In the theory of food regimes Friedmann and McMichael (1989) “situated the territorial nation-state as a central actor in the post-war food regime with its export of the first world’s model of national agro-industrialization” (Trauger 2015:87). On the other hand (Patel and McMichael 2009) indicated that Food supplies were historically a matter of national and geopolitical security, before the so-called neoliberal food regime that led to an erosion of social entitlements.

The 2007 World Forum for Food Sovereignty defined the concept of food sovereignty as “the right to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and the right to define their own food and agricultural systems” (La Via Campesina 2007:1). On the other hand, nation-state food sovereignty was identified as food self-sufficiency, protection of farm livelihood, agro-ecology, and autonomy from transnational capital. The fertile land is reserved for food sovereignty and food security because more than 90% of the global food grows on soil (Juniper 2013).

Carolan (2013) indicated that food security has become a focal point bringing our world to one point on issues related to agriculture and food policies. The food prices crises of 2007-2008 raised a great alarm to the global community and the food-security framework for feeding the world’s population gained great support. The food security framework was under pressure due to its unrestrained support for the present food-producing activities which are accepted as socially unjust and environmentally unstable. The current food system power relations are working in favor of large-scale, capital-intensive, export-oriented agriculture on the cost to consumers, food producers, and nature. As an alternative to the existing food system food sovereignty is proposed which is accepted as, an ecologically sustainable and locally controlled system (McMichael 2009, Wittman 2009). Many countries such as Bolivia, Venezuela, Nepal, Mali, and Senegal have integrated food sovereignty as part of their national policy (Wittman, Desmarais, and Wiebe 2010).

Food sovereignty shifts policy away from market-oriented mechanisms towards the right of people to control food production resources. The Nyeleni Forum for Food Sovereignty of 2007 indicated the “promotion of socially and environmentally sensitive production systems controlled by local food providers” (La Via Campesina 2007b: 53). According to La Via Campesina (2007a) the doctrine of food sovereignty “prioritizes local and national economies and markets and empowers peasants and family farmer-driven agriculture, artisanal –fishing pastoralist-led grazing, and food production, distribution, and consumption based on environmental, social and economic sustainability” (Trauger2015:89). As the concept of food security sees all food as equal and gives more emphasis on the quantity of food, while food sovereignty accepts food as a right aspect for all and it comprises the distribution, access, and control of food production resources (Windfuhr and Jonsen 2005).

3.6 The Nation-state Food Regime

There are major changes regarding the world food economy to understand and analyze the reason behind these changes Friedmann and Philip McMichael (1989) introduced a sociological approach known as food regime theory and it deals with “the relations within

which food is produced” (McMichael 2009:1). This deals with examining the existing relations between various actors, modes of production, capital flow, and power in the global food economy. The nation-state in the food regime consists of three stages which are mentioned below

- ***The first food regime (1870 to 1930s)***: the origin of this concept was built based on the colonial suppression and exploitation
- ***The second food regime (1950 to 1970s)***: this is the era where the national food system started. This food regime was built based on agro industrialization and the national farm sector. It is the time when colorization and national farm sectors are the main attributes of the food system. It gives much emphasis on the rising number of calories produced and was known as the colorization of the food security regime.
- ***Third food regime (late 1980 -)***: also known as the corporate food regime and its main characteristic of this system is the financing of agricultural production. Food is accepted as an entity of exchange between strong transactional actors. In this regime accumulation of capital is the main purpose (Clapp 2012. McMichael 2013).

The internationalization of the world food economy globally was expressed largely as the product of nations that have pursued their interests as food exporters (Clapp 2012; McMichael 1991). Patel and McMichael (2009) illustrated the way how nation-state sovereignty has been a disguise for corporate power. Food sovereignty has the potential to give power to the actors and resist state power and insists that the state is the protector of national agriculture against the neoliberal trade policies (Otero 2012). Windfuhr and Jonsen (2005) illustrated that the decline of a country’s government authority in controlling the national land and resources is one of the main aspects leading to the current corporate food regime which was criticized largely (Windfuhr and Jonsen 2005). If a nation is characterized by importing an agricultural product the state is accepted as a good example for both food sovereignty and food security. China is one of the good examples that are self-sufficient in food products, however by thinking for the future generation and they invest in land in foreign countries to secure additional food. Based on this the state is considered the main actor who protects its people and local farmers against food price fluctuation on the international market (Trauger 2015).

In the past sixty to seventy years food security was established as a successful “consensus frame” for worldwide agriculture and several researchers have mentioned the social and ecological failures of this consensus frame (Carolan 2012; Mooney and Hunt 2009). Based on this idea food sovereignty was linked with strengthening the main actors in the developing countries who act against the consensus frame. Recently studies related to food sovereignty

started to appear from the global north (Witman, Dismarais, and Wiebe 2011). Carolan (2012) expressed the difference in the idea of how food security was implemented largely as a symbol for the increased global market integration against the idea of genuine food security that involves ecological social and economic sustainability. The idea of genuine food security is similar to the objectives of food sovereignty advocates.

3.7 The Global Food Crises

The years 2007-2008 witnessed global shocks and uncertainty because the foods supply system was in a position of commodity price volatility which was known as the “world food price crisis.” During the food crisis time, the price of maize was more than doubled and the price of rice and wheat increased by 70% and 50% respectively. This crisis leads to social unrest and it escalates globally and the looking at alternative policy and market adjustment (McMichael 2009b). After the investigation of the main reasons behind the crises, it was concluded that there were several co-existing tendencies in the corporate food system, the increasing cost of fuel, the global inflation of food prices by the monopoly of the agro-industrial business, and the funding of agricultural products via speculation (Clapp 2012).

The increasing numbers of people who are suffering from hunger and living on the poverty line are the outcome of the increase in food prices globally (De Hoyos and Medvedev 2009, Dessus, Herrera and Hoyos 2008, Ivanic and Martin 2008). According to the World Bank in 2008 around 130 million to 155 million people were shifted towards poverty due to the food crises, whereas the poverty challenges posed due to higher food prices have returned (World Bank 2010c). At the end of May 2009 in low-income countries, the price of food started to increase by 8% faster than none food item prices. Based on research conducted in nine low-income countries due to the rise in food prices the poverty level increased by 4.5% however, the level is not evenly distributed across the countries (Ivanic and Martin 2008). The Economic Commission for Latin America and the Caribbean indicated that the food prices crisis added extra 10 million people to the position of extremely and moderately poor. In addition to this, research conducted in 19 Latin American nations expressed that poverty rose by 4.3% which is in the region of 21 million extra poor people (Robles and others 2008). Revenge Wodon and Zaman (2008) indicated that with the increase of cereal prices by 50% in Africa the number of poverty in the continent climbed by 4.4%. Tiwari and Zaman (2010) estimated that due to the slowdown in the world economy the undernourished population increased by 41.3 million in 2009, which exceeds 4.4% if the crises had not happened.

It was trusted that a free-market economy with little interference from a government would be a better alternative, more efficient, and more productive than a command or planned

economy. On the other hand, a report that emerged in 2008 noted that countries in Latin America liberalized their agricultural trade to chase the promised benefit that they can gain from trade liberalization which could be access to extensive international markets, modern technology, and providing cheap food prices for consumers. In reality, the outcome was much less than expected the job creation in the industry was minimal and governments were struggling on finding a convenient policy with the potential to ensure sustainable development. The report also indicated the “tendency in the past quarter-century to overestimate the benefits to the poor of cheap imports and underestimate the development and poverty alleviation benefits of a strong domestic food agricultural sector (Perez, Schlesinger, and Wise 2008).

Based on the recommendations imposed by the international financial institutions to follow liberalization the subsidizing of small-scale farming in developing countries was reduced which resulted in the hardship of the consumers to purchase the food they need. From the beginning of the 1980s governments of different countries were motivated to promote export to attain foreign currency which can play a vital role in importing food. As the production of agricultural products was high most of the crops are aimed for export and this does not mean that food security is attained. This is because crops that grow for export can only encourage investment in crops that are capable of generating foreign currency rather than producing low-priced crops which can cover domestic demand (United Nations n-d)

Numerous developing countries shifted towards the global market to purchase cheap food crops mainly wheat and rice than growing their own food crops. Some of the countries which import food crops used to be self-sufficient in food production. Food importing is becoming a culture in most developing countries and it is becoming a common phenomenon in some Sub-Saharan African countries. Some net food importers countries limited the exporting of food to protect their population from increasing international food prices (Alihaya 2008). This food export limitation leads to the decline in the supply side of the international food trade and resulted in an increase in food prices mainly rice.

In case of Eritrea it is very hard for the government to purchase the desired amount and type of food on need because of the sanctions so the only option of the government is to produce it through the national strategic plan. On clarifying the effect of a sanction towards Eritrea the advisor of the Eritrean President Yemane Ghebreab indicated that “Once major corporations, institutions that we do business with, get a feeling that Eritrea is under sanctions, they become very nervous about doing any business with Eritrea. They become afraid of falling afoul of US sanctions and becoming sanctioned themselves” (Tesfanews 2023). This indicates that it is very hard for Eritrea to import the desired amount of food for

its people from international market instead to work hard to produce the amount of food on demand.

3.8 Food Security Approaches/Models

Ensuring food security is one of the main aspects of sustainable development goals (UN 2015) and it is also accepted as the main memo of the African Union (FAO 2012, African Union Commission 2015). Collectively the objective of food security is largely agreed on the insuring food availability and accessibility to all people. However, the approaches to attain the objective of food security remain extremely contested (Shilomboleni 2017). In the current literature related to food security, they point out two significant but contrasting approaches which are the green revolution and the commercialization approach against food sovereignty and the social-ecological resilience approach (Mckeeon 2015, Wittman et al., 2016).

From the start of the new millennium in Africa the green revolution approach which is supported by major organizations like the Rockefeller Foundation and Bill and Melinda Gates Foundation become a prominent approach (Blaustein 2018, Shilomboleni 2017). The main objective of this approach is to attain food security via increasing crop output per unit area, through the shifting from the traditional subsistence system to commercial agriculture and the adoption of hybrids and genetically modified crops (DeVries and Toenniessen 2001, Rockefeller Foundation 2006, Blaustein 2018). The green revolution approach mainly focused on the providing of agricultural technology and the extension of services and the approach agreed that efficiency gains can be accomplished through the implementation of technology by farmers and having improved access to inputs such as crop breeds, irrigation technology, and fertilizers and output markets (Toenniessen et al., 2008). Regardless of the success, it gained in transforming rural economies in Asia and South America (Dawson et al., 2016), essential downsides of the approach are mentioned as high-income inequality, high costs of inputs, community conflicts, environmental degradation, and biodiversity loss (Shiva 2011, Amir 2013). Dawson et al (2016) witnessed that the green revolution approach had not registered success in Africa because of its incompatibility with local cultures and ecological settings. On the other hand, it has achieved prominence because of its infrastructural development (Dawson et al., 2016, Ejeta 2010), institutional support via the Alliance for a Green Revolution (Bill and Melinda Gates Foundation 2017), and the desire to produce more food for the growing population (Shilomboleni 2017) and the belief of African governments in yield increases as a solution for food security (African Development Bank 2014).

As an option to the above-mentioned approach, the concept of food sovereignty stressed the right of the local community to decide on what to produce and what to consume. The concept of food sovereignty also maintains the value of the local communities' experiences and the way how the locals control resources and the food system. It also tried to look after nature by practicing a diversified farming technique (Neyleni Declaration 2007). Although it gives much emphasis on social and ecological aspects food sovereignty was criticized due to its poor attention to the pressures that could emerge from the continuous increase in population growth (Shilomboleni 2017).

The concept of agricultural commercialization is favored by some African states (NEPAD 2003). Agricultural commercialization overlaps with the concept of the green revolution however it is different in its objectives which aim at the production of efficient commercial crops based on the standard of comparative cost advantages. The agricultural commercialization approach believes that markets are the main source of agricultural transformation and it looks at farmers as the crucial agents who decide what the product should look like depending on the cost efficiency and contract extension service needed. In the case of the green revolution, the approach believed that the state is the main agent of transforming agriculture by providing training and consulting on choosing the right crops, inputs, and production techniques (Van Den Ban and Hawkins 1996).

The resilience farming approach is different from the food sovereignty technique as the resilience approach adopts a complex adaptive system that employs feedback, slow drivers of system behaviour, and emergent system dynamics which is the outcome of self-organization (Fischer et al., 2015). Compared to traditional resilience thinking the food sovereignty approach is more openly concerned with the power relations between actors (West et al., 2014).

The four different and independent approaches which are mentioned above have great potential for achieving food security. These approaches are the green revolution, food sovereignty, commercialization, and resilience approach. The process of attaining food security in these approaches is quite different in subjects related to the process of food production, the task of biodiversity, marketing issues, and the governance." Different approaches were adopted sequentially, following various political and economic changes (e.g. from command-and-control policies to capitalist policy, and recently to a developmental state policy that puts the state at the centre of ensuring food security), but several approaches to food security currently coexist" (T.S Jiren, et al, 2020:2). The existing Development State development paradigm (Brems et al., 2015) indicates that policy goals include the production and productivity of cash crops, attaining of extra income and

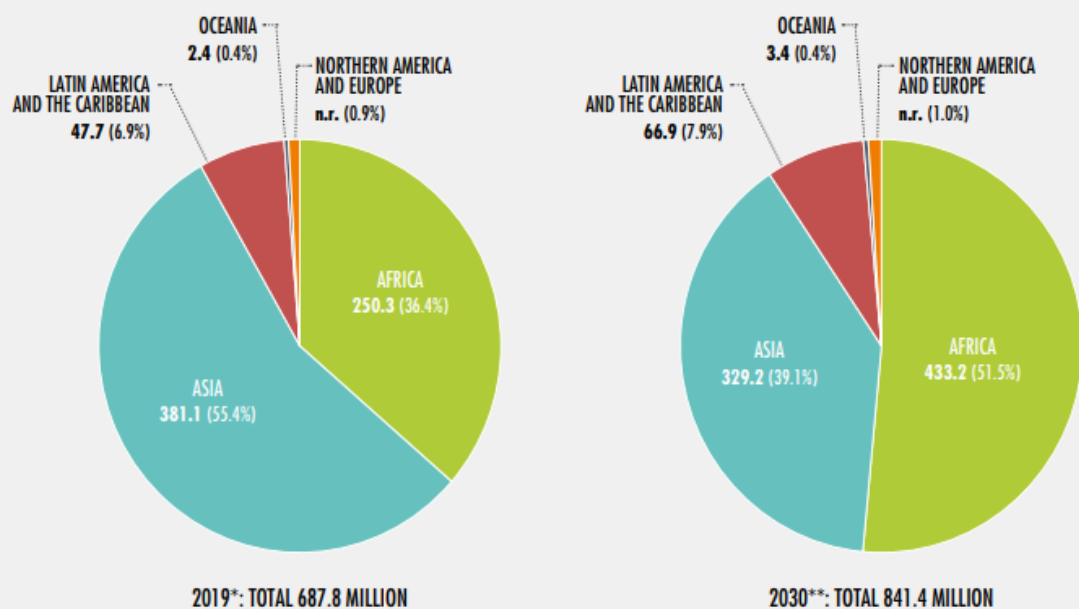
integration of the market via smallholder transformation, sustainable management of resources, and the guarding of the rural communities from been exposed by natural disasters and market risks. In the case o of Eritrea the government have initiated and introduced policies and programs with the objectives of promoting drought-resistant breeds of livestock and targeted at ecosystem enhancement, introducing variety of drought resistant crops, applying of integrated pest management and disease control techniques supported with other cultural practices (Ministry of Information 2023).

3.9 Challenges of Food Security

There are many threats and challenges in the world that lead to the slowdown of economic growth and the progress of achieving sustainable food production. A conflict between two nations or internal conflicts could be mentioned as catalysts that lead to instability and displacement of people. Climate change and the increasing climate extremes variability from time to time are other challenges mentioned that affect the development of agricultural efficiency, food production, and natural resources. It also leads to the changing of the rural lifestyle by declining the number of farmers. The outcome of these changes was the shifting of the system of food production, food allocation, and food consumption globally. It also shifts into a new way of food security nutrition and health challenges (FAO 2020). As Eritrea is part of the globe all the above-mentioned attributes related to the challenges are common.

By September 14 2010 FAO published an estimation that 925 million people were suffering from hunger by the year 2010. The number was below the number which was recorded in 2009 which was 1,020 billion. However, the number was higher than that of 2008 which was recorded before the global food crisis. By 2010 it was recorded that 13.5% of the global population was suffering from hunger. As the Asian Pacific recorded 578 million, Sub-Saharan African countries share was 239 million, in terms of Latin America and the Caribbean it was 53 million, the North African countries figure was 37 million while the developed countries recorded the lowest number of the total global population suffered from hunger which was 19 million (Sasson 2012).

IF RECENT TRENDS PERSIST, THE DISTRIBUTION OF HUNGER IN THE WORLD WILL CHANGE SUBSTANTIALLY, MAKING AFRICA THE REGION WITH THE HIGHEST NUMBER OF UNDERNOURISHED IN 2030



NOTES: Number of undernourished people in millions. * Projected values. ** Projections to 2030 do not consider the potential impact of the COVID-19 pandemic. n.r. = not reported, as the prevalence is less than 2.5 percent. SOURCE: FAO.

Figure 2,2 Global Hunger Distributions source FAO (2020)

According to figure 2.1 in 2019 out of the total 687.8 million undernourished world populations, Asia accounts for 55%. On the other hand, Africa accounts for 36.4% of the total world population. The share of Latin America and the Caribbean was 7%. Oceania, North America, and Europe account for the smallest share of undernourished or hungry people (FAO 2020).

Without considering the impact of COVID-19 the projected trends of hangers will be different and the geographic distribution globally will change radically by 2030. Out of the total undernourishment population of the world which is 841.4 million Asia will be home to around 330 million which is around 39% of the total. In the case of Africa, it will be home to around 443 million undernourished people which accounts for 51.5 % of the total global hungry people. This will make Africa the highest and will take the lead from Asia. Latin America and the Caribbean will be inhabited by a slightly higher number of hungry people than the existing trend by 2030 (FAO 2020).

In addition to the above-mentioned predictions, the World Bank's pattern was identical to that of FAO. It predicted that Sub-Saharan Africa and mainly the area which is characterized

by conflict and weak economies are going to be home to a large portion of the world's poor people by 2030 (FAO 2020).

It was obvious that beyond hunger the increasing figure of the population has a role in reducing the quantity and quality of the food to be consumed. According to the report by FAO (2020), approximately 2 billion individuals which are 25.9% of the total world population experienced hunger and didn't have access to sufficient food by 2019. In Africa alone, the total number of people who experienced hunger by 1919 was more than 250 million which accounts for 19.1%, which is greater than that of 2014 which was 17.6%. This is more than double the world's average which is 8.9% which is the highest compared to the other continents.

3.10 Challenges of Food Security in Eritrea

Ravinder (2004) indicated that before the rise of the war for independence, "Eritrea was net exporter of agricultural products. In the Ministry of Agriculture and FAO sector review of 1994. It is stated that Eritrea has been a region of agro-industrial and fishing centre which accounted for 40 percent of industrial output of Ethiopia" (Rena 2004:5). The lowland region of the country was well known for its large-scale agricultural fields that accommodate different horticultural and oil crops, but with the starting of the war for independence that ended for 30 years the agricultural sector of the country was damaged very badly and the sector was completely on a dormant or stagnant stage and finally it was declined (Ravinder 2004).

The deteriorating of agricultural activity was the outcome of the war where it leads the people to be too poor to cultivate crops, and the lack of important resources and the existence of land-mines on the agricultural fields also discourage the communities and make the practicing of agricultural activities very hard to run. The border conflict of 1998 to 2000 also played a vital role on exacerbating the food insecurity of the country as majority of the people who resided around the border which is at a closer proximity to the warzone makes the agricultural activity stagnated and most of the people were displaced. In the years of 2003 to 2004 the USAID Famine Early Warning System Network, the Eritrean Relief and Refugee Commission (ERRC) asked for an emergency request for \$147 million to assist around 1.6 million individuals where 50% of them are affected by the war and drought. Out of the total 1.1 million are mainly affected by the war 335 000 are affected by drought on the other hand 175 000 are impacted as host communities and around 150,000 suffers due to urban poverty. It is expressed that out of the total around 80% to 90% of these which are affected by food insecurity are children, women and old aged members of the society.

Furthermore on expressing the experience of sanctions and the challenges the country is passing through Yemane Ghebreab point out that “We had an experience with this during the previous nearly 10-year UN sanctions on Eritrea. Those UN sanctions were an arms embargo, but people don’t always read the fine print of sanctions resolutions on Eritrea. They just hear that Eritrea is under sanctions, so they don’t want to deal with Eritrea” (Tesfanews, 2023).

When a sanction was imposed for extended period on a country the damage the sanction caused to the country’s socio-economic development is tremendously high. The sanction that was imposed on Eritrea by the UN stayed for around 10 years and caused a major impact and affected the economy of the country and the living conditions of the Eritrean people negatively where it slow down the economic growth and its developmental strategies according to the system it needs. The first sanction that was imposed by the United Nations was lifted after the peace deal of 2018 where both the Eritrean President Isaias Afwerki and the Ethiopian Prime Minister Abi Ahmed discussed about bringing peace between the two countries. By November 2011, another sanction was imposed against Eritrea this sanction was a unilateral sanction imposed by the United States of America in this sanction Eritrea was excluded from the SWIFT (Society for Worldwide Interbank Financial Transactions). The SWIFT is a system that played a vital role on conducting international financial transactions. The exclusion of Eritrea from the Banking system makes the international trade activity of the country exceedingly difficult as most of the global trade activities are conducted through the system and use the euro or dollar as their main trade currencies. Based on this Yemane Ghebreab said that “countries excluded the SWIFT system have trouble conducting trade of all sorts because they can’t complete financial transactions in dollars” (Tesfanews 2023). So the imprint these sanctions left behind towards Eritrea and its people is imminent and slowed down the developmental strategies of the country and the importing of food products and technologies needed to enhance food security.

3.11 Water Security

Water is concerned as the economic, social, and cultural lifeblood of humanity. Clean abundant water provides the foundation for agriculture, industry, commerce and transportation, energy production, and recreation. Water is one of the fundamental bases for life itself, as the immense diversity of our planet’s flora and fauna demonstrates. regardless of its vital importance to our lives, however, the day-to-day population growth, the expansion, and development of urbanization, high competition among consumers worldwide, exacerbated by constant drought and possible climate change, is a big worry over the continued availability of stable and dependable supply of fresh water for countries

throughout the world, now and for the foreseeable future (Solley, Pierce, and Perlman 1998; World Resources Institute 1999) (Hopkins 2007).

According to the World Resources Institute (1999), “the world’s thirst for water is likely to become one of the most pressing resources issues of the 21st century” (Hopkins 2007:5). The World Bank also reported that many developing countries face water crises due to the continuous dependence on irrigation methods for crop production, another issue is the excessive consumption of water due to the rapid urbanization and the decline in supplies resulting from the stream and aquifer depletion and deteriorating and /or poorly maintained urban water infrastructure (World Bank 1996b). A report issued by UNESCO in 2003 predicted that around 7 billion people from 50% of the global nations will face potable water crises by 2050 (Hopkins 2007).

Water in all its form is a very important resource for both plants and animals and plays the most critical role in humanity (Mokgope and Butterworth, 2001; Ngaira, 2009). Nonetheless, water is becoming among the limited resources that require efficient utilization for sustainable and social development (Cosgrove and Loucks, 2015). This is due to the continuously increasing population that resulted in high demand for water for agricultural, domestic, and industrial activities. As a consequence, different parts of the world in general (Mancosu et al. 2015) and developing countries in the arid and semi-arid regions like Sub-Saharan Africa (SSA) in particular (Eva, 2009) are negatively affected by the economic and physical shortage of water. This problem is further aggravated by the adverse influences of climate change (such as drought) on the sources of water (Calow and Mason 2014; Scheme et al., 2014). This has a straight impact on agricultural production and productivity (Shah et al., 2008; Nelleman et al., 2009) which could cause serious problems for rural livelihoods and increase food insecurity. Water and food security are the key challenges under climate change as both are highly vulnerable to continuously changing climatic patterns (Misra 2014). Food security is a complex development program that deals with people’s physical and economic achievement of safe and nutritious food to sustain a healthy and active life. For this reason, the availability of water in quantity and quality is strongly connected with food security because all food resources are directly or indirectly water-demanding (IPCC et al., 2014). The pressure of climate change, which poses a big challenge to social and economic development, many times folded into arid and semiarid regions, and in developing countries where their economy is inflexible and depend heavily on climate-sensitive sectors such as agriculture, water, energy, and tourism (Munang et al., 2013; IPCC et al, 2014). Indeed “water for food” has become an important slogan in the current arguments on poverty reduction and climate change in SSA (Allouche, 2011).

Like most African countries Eritrea is an arid and semi arid country which is gifted with less water resources. Similarly to the rest of Sahelian African countries Eritrea experienced repetitive drought which is the main cause that resulted on the scarcity of ground water which is the main source of fresh-water that can be used for different purposes.

According to a report which is conducted by the Ministry of Finance and National Development (2022) Eritrea is divided into five river Basin systems which are listed as Setit, Mereb-Gash, Red Sea Basin, Barka Anseba and Denakil Basins. The five river basins of the country have around 9,967Mm³ mean annual runoff yearly. Out of the total 932.2 M m³ flows towards the east and the final destination of the most is the Red Sea and around 8.612.9 Mm³ flows west word while the remaining flow which is around 421.9 Mm³ remain on the way before they reach to their final destinations. These river basins played a vital role on supporting the agricultural sector because they are the main source of water for the farmers to practice agricultural activities.

Water is one of the main resources that played a vital role in economic growth, poverty reduction, food security and environmental sustainability of a nation. Water also played a significant role on enhancing and development of industries, tourism and agricultural sectors (Minstry of Finance and National Development 2022). Due to the role that water can play on national development of a country the Ministries of Mining Land Water and Environment required to “place a comprehensive policy and legal frame work for effective and sustainable management of the water sector. The Water Policy, Water Law, Water Sector Institutional Framework, and Water Sector Human Development document were drafted in 1997, before being revised in 2007. The Water Policy promotes the principles of integrated water resources management as a means to ensuring sustainable management and utilization of water resources, as well as promoting the full participation of women in all water management and development activities (Ministry of Finance and National Development 2022:52).

Due to the huge investment conducted by the Eritrean government access to safe and clean water has increased massively throughout the country. It was reported that the rural population of Eritrea who are enjoying clean and safe water has increased considerably from 7% in 1991 to 70% in 2021 while the urban population who enjoyed access to safe and clean water increased from 30% in 1991 to 92% in 2021 (Ministry of Finance and National Development) .

Chapter Four

The Research Method and Methodology

4.1 Introduction

This chapter deals with the theoretical frameworks of the research the bond between the Eritrean self-reliance model and the collaboration of governance model. This section also expressed the researchers existing philosophical link and my ontological and epistemological position. The chapter also expressed the methods and designs, which are going to be practiced to accomplish the research. This section also mentions the techniques of data collection, data analysis, and presentation. As the research's main focal point deals with self-reliance, policy on attaining sustainable food and water security in Eritrea will be assessed with the support of a collaborative governance model. A qualitative research method is implemented as the main technique to answer the main research question and sub-questions and the data is collected from, different resources through secondary data collection techniques.

Due to financial, time and remoteness of the research area constraints the study was conducted based on secondary data collection technique. However, due to the unavailability of certain data on the international database stores related to Eritrea it is hard to find some of the main indicators with the potential to answer certain questions related to the food and water security in the country. This restricted the data to be reliant on the available resource of data which is collected from several reports, interviews and documents which are sourced from the different institutions of the country and this can be considered as one of the limitation on the data collecting technique.

4.2 Theoretical Conceptual Frameworks

The conceptual foundation of the Eritrean model of self-reliance policy is assessed based on the model of collaborative Governance adopted from Ansell and Gash (2008). Furthermore, the paper is worked based on the concept of self-reliance policy, dependency theory agro-industrialization theory. The paper also discusses the main challenges and economic contributions of the developmental projects in detail. As there is, a lack of scholarly research papers related to the topic under study this paper will not depend on a specific piece of research however will be presented, on the reflection of different research papers and mainly centred on the model of collaborative governance.

Smith and Liher (2014) stated the traditional themes that represent the assumption of self-reliance theory which are “being true to oneself” which expresses the acknowledging of one’s heritage and serving depending on the majority point of view of one’s culture. The second theme is “being connected” which illustrates the identifying and utilizing of resources within the making of it. It also explained that all the talents and creates the individual owns are not for the benefit of the individual owns solely, but for the benefit of the family community and cultural group, overall it is for the benefit of the nation collectively.

“As baseline definition, it can be taken that governance refers to the rules and forms that guide collective decision-making. That the Focus is on decision-making in the collective implies that governance is not about one individual making a decision but rather about groups of individuals or organizations or systems of organizations making decisions“ (Stoker 2004:3). Interdependence fosters an aspiration to engage actively and a commitment to meaningful collaboration. Differently, if interdependence is poor the building up of effective trust will be very difficult. If an individual stakeholder starts to threaten to withdraw from collaboration, the readiness and commitment of the entire stakeholders have the probability to expose to risk because of the development of ownership, understanding trust will be at its lowest level (Ansell and Cash 2007)

Knack (2001) proposes that aid will undermine the institutional quality of a country that depends on aid by reducing its accountability and motivating corruption and rent-seeking manners and Oya's (2006) argument indicated, that “donor-recipient relationships have left scarce policy space to recipient governments to formulate innovative trade, agricultural and industrial policies. Moyo (2009) argues that African countries are poor precisely because of all the aid they receive” (Balcilar, Tokar, and Godwin, 2020) and Kasper (2006) points out that in the last half, a century period SSA countries received foreign aid that staggered one trillion American dollars. The history of foreign aid is proof that Sub-Saharan Africa's “big push” paradigm is not effective; it does not work at all in the real world. The record indicated the failure of foreign aid in bringing any significant change. The western countries contributed around 600 billion in the form of foreign aid to Africa between the 1960s and 2000 (Akonor, 2000; Easterly, 2005). Despite the huge amount of foreign aid awards they received African countries' rank is very low and most of them are in the bottom position based on standard international comparisons.

As history and different scholars proved aid dependency is not a good solution and not working in the case of African countries at all. Depending on the above argument, this dissertation argues that as aid is not the ultimate solution for African countries the Eritrean

strategy of a free choice policy of self-reliance policy will be a good alternative that leads to attaining the desired developmental program of a country.

Putting the above-mentioned arguments as a foundation the conceptual framework of the dissertation is built by putting the self-reliance policy of the state of Eritrea as a central concept. Eritrea was able to construct a large number of micro and macro dams within the country, aimed at the development of different economic development projects. The construction of the dams leads to the transformation of the subsistence agricultural activity into an agro-industrialization mechanism that leads to local and national economic growth. Opposite to this by implementing the self-reliance policy Eritrea is exposed to a sanction and this sanction is imposed by the United Nations that halts the importing of developmental types of machinery from abroad the sanction also acts as the main push factor for the migration of qualified human resources.

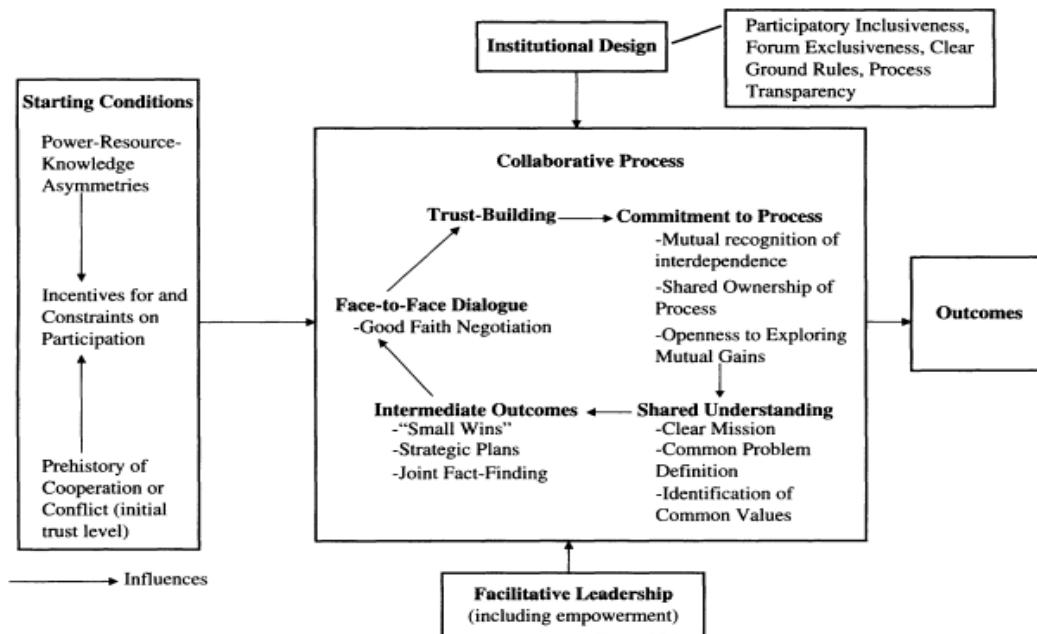
4.3 Identifying the Bond between the Eritrean Self-reliance Model and the Collaborative of Governance Model

Collaborative governance is widely defined “as the process and structures of public policy decision making and management that engages people constructively across the boundaries of public agencies, level of government, and/or the public, private and civic spheres in order to carry out public purpose that could not otherwise be accomplished” (Emerson, Nabatchi and Blogh 2011:2). This definition tells that the collaborative governance model can play a fundamental role in applying it broadly as an analytic structure in different sectors and clarifies the existing difference in various institutions. Ansell and Gash (2008) declared the development of a new approach to governing known as “collaborative governance” and this approach owns the potential of bringing different stakeholders together in a common objective of public policies and a consensus-oriented decision-making structure.

Based on the report of the Ministry of Finance and National Development (2022) it was indicated that on tackling different challenges and extreme conditions with the potential of hindering individuals and communities as a whole makes the country more solid, ready and resilient on avoiding the risks. On attaining this, the government developed the collaborative, whole-of-society approach, with the support of broad consultation with and active involvement of communities, different institutions, and large number of experts and stakeholders. Different actions were taken by different institutions which are the setting of priorities, identifying of goals, and having concrete objectives, and then recognize the critical challenges and vulnerable sectors or populations.

The model below indicates the visual representation of the collaborative governance model adopted from Ansell & Gash (2008) which is going to simultaneously represent the Eritrean model of collective of governance based self-reliance policy and will give a clear image of the Eritrean Model of development.

Figure 4.1 a model of collaborative Governance



A Model of Collaborative Governance Ansell & Gash (2008)

The model of collaborative Governance in figure 4.1 which is adopted from Ansell and Gash (2008) gives a clear image of the four main broad variables that represent the whole model. The four main visible variables are *Starting conditions, institutional design, leadership, and collaborative process*. Further mini variables are generated from these four broad variables. In this case, the collaborative process represents the central position of the model, while the variables of the starting conditions, institutional design, and leadership variables are considered the major contributors to the collaborative process. Ansell and Gash (2008) indicated that the starting conditions lay down the basic level of trust, conflict, and social capital that become assets or liabilities in the time of collaboration. The institutional design which is indicated in figure 4.1 expressed the fundamental rules where collaboration takes place. In terms of leadership, it is described as an essential variable that provides important mediation and facilitator for the success of the collaborative process. As it contains various

variables within it the collaborative process is a continuous and nonlinear process that operates in a cycle-way.

This research paper investigates the model of self-reliance policy of the state of Eritrea and, is analyzed depending on the variables mentioned in the model of collaborative governance. In the case of the outcome's variable in figure 4.1 are represented by the outcome of the self-reliance model that defined the collaborative process that lead to the construction of the different dams and the dams makes the building of the different agro-industrial projects that played a vital role on generating economic growth. On the other side, the sanctions which are imposed by the United Nations against the country are the outcomes of the unique doctrine of self-reliance policy of Eritrea which is practiced by no country of the SSA countries.

Based on the collective of governance of self-reliance model of the country the ultimate objective of the leadership of the government is to improve the well-being of the people, as a result, the decision to introduce agro-industrialization is the result of the government's platform on the collaboration of the different institutions and local communities that built the dams, and the agro-industry is the outcome of the dams. These agro-industries generate jobs for the local communities that increase the income of the communities and the communities promotes food security that improves their nutrition which plays a vital role in the building of healthy and productive manpower.

4.4 Linking Philosophy to Research and My Ontological and Epistemological Position

The epistemological and ontological assumptions that I put out in this research are the outcome of the foundation of my thinking and understanding of the subject matter under study. These assumptions pave the way to express my opinion and my understanding of the research paper and the development of my research techniques and the methods that I implemented to conduct the research. Being an Eritrean citizen, the researcher has deep knowledge of the Eritrean government's policy of self-reliance, which depends on a free choice doctrine. Eritrea as a country is the sole nation, which is less affected by the previous and the current drought caused by climate change that hinders the majority of the East African countries mainly those in the Horn of Africa. Someone may ask the question to know the secret why Eritrea is not affected as much as the rest members of the Horn of Africa. The answer is simple it is due to its self-reliance policy that the country is following that leads to the construction of large numbers of strategic developmental dams depending on the domestic capacity.

In this research, I argue that the running and implementing of developmental projects depending on external powers' aid is not working at all in the case of African nations. Like the other continents of the world, Africans have a deep knowledge of their own identity, culture, and norms so they can fulfil their national needs without the interference of outsiders. Depending on western expertise to guide you on what to do or not to do by providing aid in the form of money or food full of conventionalities' and makes the African governments be corrupted and satisfy the interest of the aid donors and be aid dependent for life.

Most research that deals with foreign aid highlight the effectiveness of the aid strategy whether it is conditional aid or unconditional aid and they did not go deeply to investigate what is the reason behind the success or failure of the aid strategy. In addition to this, most scholars did not seek to identify the options that can bring an ultimate solution. Based on that this paper is going to emphasize how Eritrea is dealing without being an aid recipient and debt free country from the World Bank and the IMF however the country was able to construct a large amount of small and large dams with huge potential and vital role to play on food and water security of the nation.

Creswell (2013) points out that the issue of ontological assumption is related to the nature of reality and its characteristics at the same time Creswell also expressed that the conducting of a qualitative technique to conduct research is a mechanism of embracing the idea of multiple realities. Based on that, one of the main aims of this research is to tell the world about the multiple untold realities and experiences of Eritrea in dealing with the different challenges it approaches and the self-reliance strategy of economic development.

According to Slevitch (2013:74) ontology is defined as "the study of reality or things that comprise reality". Ontological positions describe what entitles exist or can be said to exist or can be said to exist and what kind of relationship exist among basic categories of being (Guba and Lincoln 1989). Ontology is also described as the study of "being" and is concerned with what is, i.e., the nature of existence and structure of reality as such (Crotty 1998) or what is possible to know about the world (Snape and Spencer 2003). The position of ontological assumption develops the process of knowing that leads to the next term known as epistemology, which is the theory of knowledge and deals with the nature and scope of knowledge.

Similarly, Richie et al (2013) mentioned that epistemology deals with the way of knowing and learning about the world, and the main centre of attention is how we can learn about reality and what forms the source of our knowledge. In knowing what the truth is, this research explores the first-hand source of information by investigating the reality and looking at what

is happening on the ground. To know what I know about reality different justifications are collected about the truth from real sources which are reports from different institutions that are actively involved in the developmental projects or, from interviews conducted by the state-owned television that conducted several interviews with the local communities, and members of the different institutions who are actively engaged in the project's activities. As an Eritrean citizen who owns a broad knowledge of the area under investigation, my position on the research is to reveal the reality and the truth, which is supposed to be known by the rest of the world. This will help in having a balanced image of what Eritrea has done so far on the agro-industrial developmental projects and how are all these developmental projects run without the support of any external forces at the same time it will tell what challenges were passed until now.

4.5 Qualitative Research Methodology

The aim of selecting the appropriate research methodology is to answer the main research questions of the research related to epistemological and ontological perceptions. The methodology is expressed in the sense of the ontological and epistemological views on the world where we exist and the technique of how we are intending to study or discover it. Hammersly (2011) indicated that methodology is a discipline that is concerned with studying the methods employed in carrying out some form of inquiry. Hammersley summarised methodology as a strategy applied to study the social world that is full of conflicting ideas associated with the intended goal of research and its product, on the idea of how epistemological and ontological assumptions are applied, and on how the position of research is defined related to other activities.

Richie et al (2013) indicated, "Qualitative research covers a broad range of approaches which are linked to different beliefs about what there are to know about the social world and how to find out about it. Although definitions vary, the aims of qualitative research are generally directed at providing an in-depth and interpreted understanding of the social world, by learning about people's social and material circumstances, their experience, perspectives, and histories". In addition to the depth and diversified nature, it contained, qualitative research is illustrated as a "set of interpretive, material practices that makes the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews conversations, photographs, recordings, and memos to self... qualitative researchers study things in their natural setting, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them" (Denzin and Lincoln 2011:3).

The purpose of this research is to investigate the main research question in addition to several sub-questions that assist in finding further clarification of the main question. The primary target is to investigate the Eritrean policy of self-reliance policy by looking at its historical roots and its current situation and this is assessed based on the collaborative governance model. The second target is to investigate the main economic contribution of the projects built via the self-reliance policy of the country. This is attained by collecting appropriate data from secondary resources. Thirdly, it is obvious that implementing a policy of self-reliance policy in Sub-Saharan Africa and in a region, which is characterized by hostile dry climatic conditions, will not be without a challenge. As the natural challenges are investigated and studied by different researchers, this research focus is mainly on the geopolitical challenges and investigates the challenges the nation experienced in its economic developmental programs.

The secondary data which is conducted through the documentary research method concept is essentially accepted "second-hand" data which was previously collected by another individual and consequently for different use. Secondary data is considered as the starting point of the data to be collected. This is an indication that secondary data is the available source that can be easily accessible. However, in the case of Eritrea mainly on the topic of self-reliance, the literature is limited and it is better to say that scholarly works of literature related to the topic are non-existent. Based on its definition secondary data is already available so it is so easy and financially cheap to collect. Crowther and Lancaster (2008), categorized secondary data as internal secondary data and external secondary data the data of the research is based both externally and internally.

As the internal secondary data is accessed easily within the organization under study, the source of the internal secondary data of this research is collected from reports, records, archives internal memos, and in-house magazines of different institutions which could be either the Ministry of Agriculture, Eritrea's Mapping & Information Centre (EMIC) Ministry of Development, Ministry of Land Water and Environment, local administrations and agro-industrial projects. While external secondary data comprises all the existing data, which are collected by outsiders and outside of the organization. As explained earlier it is very hard to find scholarly information regarding Eritrea however based on the very few available resources the source of the external secondary data is collected from published academic books and journal articles, conference papers, bibliographies, national government publications, research, and professional body reports, newspapers and magazines, interviews conducted through the national television, newspapers or national radio and other resources.

4.6 Data analysis

The secondary data analysis technique aims to investigate previous data which are collected and analyzed by the same researcher or another researcher to generate new questions to be answered and a new analyzing technique that is different from the previous primary analysis (Szabo and Strang 1997). Heaton (2004) tells the strength of the secondary analysis of qualitative data by identifying the role it played in reducing the researchers load from a member of the research participants and community colleagues who team up with the researcher to recognize, and get access and recruit a research participant (Morse 2007).

A researcher has to put more emphasis on selecting data that are suitable to the research question under study at the same time knowing the resource that you have is very vital. At the same time knowing the financial condition of the researcher and knowing the amount of time used to conduct the research are very essential aspects. In the secondary data collection technique, the data which is ready to be analyzed is collected by someone else as a result the secondary data researcher has to devote nothing in terms of resources on the other side financially it is cheaper than the primary data collection technique because the researcher's expense is very low as there is no need to visit the site under research. In the case of time-saving, as the data is already collected by the original researcher and ready to be analyzed by the new researcher, the new researcher spent most of his or her time analyzing the readymade data.

As it is articulated earlier qualitative secondary analysis is a technique that entails employing data that is already produced by someone else to build up a new social, scientific, and methodological understanding. As Gladstone et al (2007) expressed the availability of various reasons answering why a researcher applies a qualitative secondary analysis technique this research answered the research questions which are not the central issue in the previous studies. Bishop (2007) also tells that a researcher may intend to research that concerns participants which are hard to reach the same are true in the case of this research as it deals with issues related to Eritrea it is hard to go there and collect the data on need on a short period so the only option is to use secondary data. In this case, this research is analyzed depending on the data which was collected from different studies, newspapers, interviews, research, or other resources related to the topic under investigation.

As document analyzing method is considered a systematic technique applied to reviewing or evaluating data generated from documents originating from printed materials or computer-based materials. Alike to other analytical techniques of qualitative research In this research document analyzing technique is implemented to examine and interpret the data to draw out meaning, gain understanding and build up empirical knowledge (Corbin and Strauss 2008,

see also Repley 2007). Bowen (2009) specified that documents include text or words and images which are recorded by the first researcher as the documents are secondary resources it is difficult to include touchable evidence related to cultural artefacts. On the other side, Atkinson and Coffey (1997) point out documents are social facts that are produced shared, and exercised in socially organized ways. That is why this research analyzed documents collected from different resources in an organized manner.

The foundation of the documents that I used in this research originated from various resources which are in the form of books, institutional reports, journals, newspapers, interviews, television program documentaries, public speeches, research papers, press releases, United Nations database, and others. These documents are gathered from libraries, newspaper documentation centres, YouTube channels, and so on. In this research I adopted the same technique stated by Labuschagne (2003) which entailed data finding, selecting, appraising (Making sense of), and synthesizing the data contained in documents. Labuschagne also illustrated that the document analyzing technique gives way to *data – excerpts, questions, or entire passages afterward they will be organized into major themes, categories, and case examples mainly through content analysis* (Bowen 2009).

Thematic analysis is the technique used to analyze the data gathered through different techniques. The thematic analysis technique provides flexibility by summarizing the main futures of huge data and presenting a solid description of the data (Braun and Clarke 2006). The technique of thematic analysis gives the chance to systematically categorize and analyze the data gathered from different resources to look at commonalities, relationships, and other patterns that deal with research questions (Sparker 2005).

This research aims to answer the main research question and its sub-questions which are assigned to explore the self-reliance policy of the Eritrean model and this is achieved by assessing the model by looking at the collaboration of the governance model. Linking the collaborative governance model to the Eritrean self-reliance model played a vital role in identifying and answering several analytical framework questions first it deals with identifying if there is any existence of power difference among the stakeholders. Then it assesses what organizational capacity each institution owns and what role they played in the developmental projects. It also gives a way to investigate the availability of sufficient leadership that leads the procedure in the right direction during a difficult time. In addition to this, the collaborative governance model will support identifying to what extent the corrective trust-building procedure among the different institutions is important.

4.7 Ethical Considerations

Identifying the ethical issue is one of the most important factors in conducting research. The steps followed by the researcher concerning the research should be identified clearly (Creswell, 2014). When planning and designing a qualitative study the researcher has to think about what ethical issues might approach when conducting the study and plan how these issues can be tackled. In qualitative research ethical issue is expressed as practiced before conducting the research, at the beginning of the study, during collecting data when analyzing the data, during reporting the data and when publishing the data.

In advance of conducting the study, gathering the university's approval is very crucial. And this research is conducted based on the ethical conduct code of SOAS University which seeks an Ethical Approval process however, as the research is conducted based on secondary data collection methods it is not sensitive, and no need for any approval from any identified organization or individual.

Chapter Five

Eritrea's Socio-economic and Political Context

This chapter considered dealing with the social, political, geographical, and economic context of the country. This section gives a clear image of the main geopolitical position of the country and features related to climatic conditions, rainfall distribution, and topographic structures of the country are also discussed in this chapter. In addition to this historical context of modern Eritrea and the colonization history of the country are explored in detail. This chapter also addressed the historical context of the border conflict between Ethiopia and Eritrea and the background of the sanctions imposed on Eritrea that hindered the economic development of the country.

5.1 Country background

Eritrea is an East African country located in the Horn of Africa which lies north of the equator between latitudes 12° 22'N and 18°02'N, and longitudes 36° 26'21" E and 43°13' E. The total area of the country is 124600km². Figure 4.1 indicated that Eritrea is positioned in a very strategic geopolitical location as it borders the Red Sea in the east that extends for 1212 kilometres from Raskasar in the northern part and Dar Elwa in the south-eastern part. In southeast Eritrea borders Djibouti while in the south it borders Ethiopia and the north and western parts of Eritrea borders Sudan.

Eritrea is a small country that occupies a strategic location in the northern part of the Horn of Africa along the south-western shores of the Red Sea. Along with Djibouti and Yemen Eritrea commands the southern entrance to the Red Sea through the strait of the Bab-El Mandeb or the Gate of Lament which adjoins the vital international shipping lanes of the Red Sea that links the Mediterranean Sea and the Indian Ocean. Eritrea's endowment proximity to the oil-rich Middle East and its position on one of the busiest and most significant maritime routes make Eritrea own one of the strategic geopolitical locations (WeldeGiorgis, 2014).

Figure 5.1 Geopolitical position of Eritrea



Source BBC (2018)

Being known as one of the youngest countries in the world, after a bloody war that lasted for 30 years with a neighbouring country Ethiopia, Eritrea achieved its independence in 1991, however, the country had to wait to make its independence formally and internationally accepted until 1993 (Redae 2019).

With a total area of around 125000² and a total population, which is around 3.45 million Eritrea shares the longest part of the Red Sea coastline including around 354 islands and islets. Eritrea's landform or topography encompasses the Central Plateau or the highlands (Kebesa), the Eastern Escarpment, the Western Lowlands (Metaht), and the Red Sea Coastal Plains. The distinct Topographic structures give Eritrea an edge over beautiful landscapes, pristine waters, and coral reefs in the world (WeldeGergis 2014).

Eritrea is a country gifted with various topography, climate, and rainfall distribution. The country is accepted as an arid and semi-arid region with a high plateau and coastal plains. As the topography of the country is different the climate of the country is also different accordingly. The low land and the Red Sea coastal area are mostly branded as hot and dry zone while the plateau is characterized by a cooler and humid climate. The highlands average temperature is 20⁰c while the low land average temperature ranges 35⁰c (Rena 2005). The highland possesses a moderate temperature with minimal seasonal temperature variation while the lowland owns higher temperature variation compared to the highlands. In

a dry and hot season, the maximum temperature is around 45⁰c in the highlands in the central highlands which reaches 29⁰c.

Although Eritrea is gifted with wealthy natural resources and placed in a very strategic location that is so convenient for conducting both international and regional business activities Eritrea's economy is unquestionably rising from the scratches of war destruction and damage.

Like other countries in the Horn of Africa, Eritrea is virtually intersected by a part of the East African Rift. Eritrea owns fertile land on the western lowland that extended to the desert in the eastern part. As more than 60% of the population depends on agriculture for survival the extreme importance of water for living is understandable. The East African countries are exposed to drought several times including Eritrea the last one that the country underwent was in 2015. The lack of continuous rainfall leads to drought which forces people, especially those who live in the village mainly women to travel a long distance to fetch water for domestic use (Tesfay 2021).

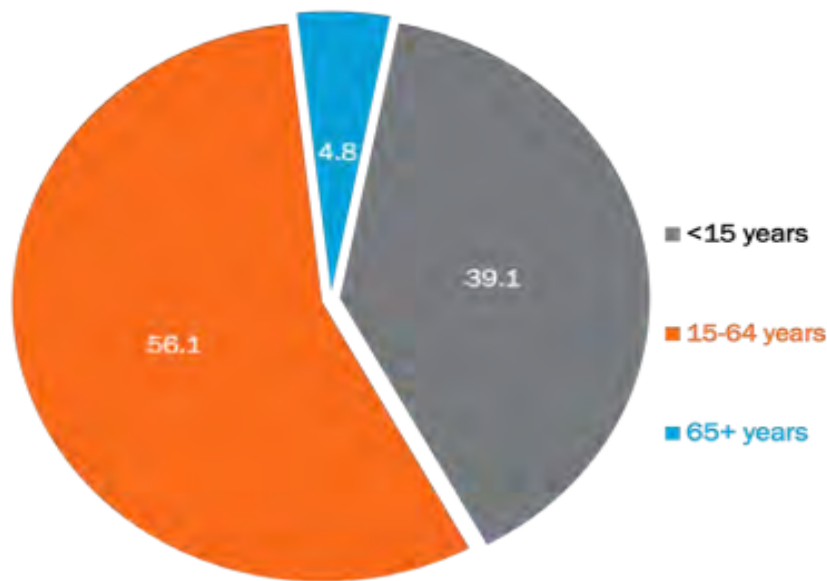
In the outlook of the ecological structure of the country and having understood the difficulties of depending wholly on the rainy season, the key rains are limited only to three months which extended from June to August and this is supplemented by short-term rain which is March to April in the highlands in addition to this there are further rains known as Bahri rains in the Eastern Escarpment that extends from October to February. Knowing the challenges since independence the government is taking initiatives on making awareness to the people on the importance of conserving water. The government is working hard on building dams in different parts of the country to guarantee water sustainability all over the nation. Activities like hillside terracing and reforestation are also practiced to prevent soil erosion and keep land fertility (Shebait.com 2021).

5.2 The Population of Eritrea

The Ministry of Finance and National development (2021) reported that the total population of Eritrea in 2019 was around 3.475 million in the year 2019. As figure 5.2 which is sourced from the report of the Ministry of Finance and National Development (2021), showed that around 39.1% of the total population of Eritrea is noticeably young which is in the age range of 15 years and less that indicates the future of the country is full of young generation. Majority of the population which is 56.1% of the total population is at the age range of 15-64 years old. This indicates majority of the population is at the active working age who owns an exciting potential to play a significant role on nation building strategies. The remaining 4.8%

of the total population is on the age range of 65 years old and above. This is the dependent age which can have a little contribution on the national development program but played a significant role on sharing their experience by providing guidance and important skills to the young generation to the success of the national development program.

5.2 Eritrean Population Composition by Age



(Ministry Of Finance and National Development 2021)

2/3 of the Eritrean population lives in the rural area of the country and the country's population density is 35 peoples per km² which is far less than the global and Sub-Saharan African countries. Like other parts of African countries majority of the Eritrean population depends on rain-fed agricultural activities and pastoralism which is the rearing of animals. According to the report of the Ministry of Finance and National Development (2021) 65-70% of the Eritrean population is actively engaged in Farming, animal herding and fishing as their prime economic activity.

Atlas (2018) tells that the Eritrean population is more densely distributed in the region where rain-fed agricultural activities are practiced mainly in the highland and south-western lowlands region. The Ministry of Land Water and Environment (2014) reported that Eritrea is endowed with a vast amount of natural resources such as gold, silica, sulfur, iron, copper, potash, Nickel, and others. In addition to this marble and granite also exist in large quantities in various parts of the country. Having a great portion of the Red Sea gives Eritrea the prospect of developing the fishing industry, tourism activity, and the possibility of oil and gas extraction in the future. As is expressed in figure 5.3 Eritrea's administrative structure shows

that the country is divided into six administrative regions (zobas). These administrative zones are Zoba Makel (the Central Region) Zoba Anseba, Zoba Debub (The Southern Region), Zoba Debubawi Keih Bahri (Southern Red Sea), Zoba Semenawi Keih Bahri (Northern Red Sea), and Zoba Gash Barka.

Figure 5.3 The Six Administrative Zones of Eritrea



5.3 Eritrean Climate and Topography

The Eritrean topography extended from below sea level to 3000 meters above sea level and the main three identified physiographic zones of the country are western lowlands, the northern and central highlands, and eastern lowlands which are also known as the coastal plains. The country owns different topographic structures, the nature of rainfall and altitudes, and climatic conditions. Eritrea owns a large number of islands around the Red Sea mainly the Dahlak Archipelago and is considered an arid and semi-arid Sahel region of Africa.

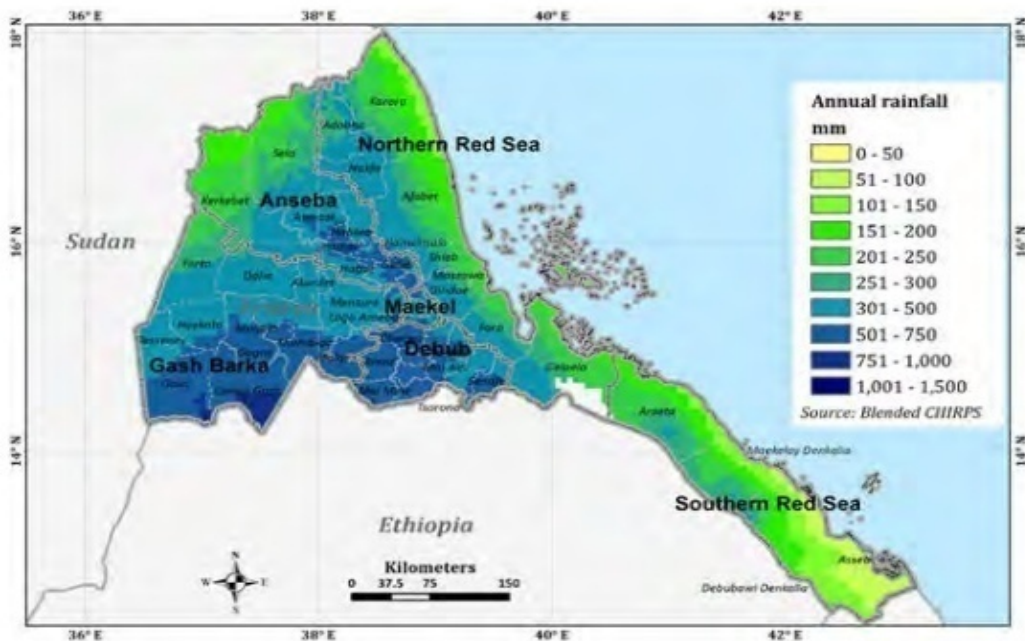
5.3.1 Rainfall in Eritrea

Eritrea's rainfall is characterized by very high intensity and substantial perception in a short period this leads to strong soil erosion and runoffs that washed the soil fertility. Eritrea's mean annual rainfall distribution is unevenly distributed all over the country and this is witnessed in figure 4.4 which expressed the mean annual rainfall distribution in Eritrea from

1981 to 2010. According to figure 5.4, the coastal area of the country receives less than 300mm of rainfall annually while in the western lowland the mean annual distribution of rainfall is 400 mm. In the case of the central highlands and southwest region of the country, the annual rain distribution is over 750mm. Looking towards the southern part of the lowlands the rainfall in the region registered from 600 to 800 mm annually and this is probably the region that shared the largest portion of the rainfall. The figure showed that the nature of the rainfall decreases significantly moving towards the northern part of the country and the driest part of the country is indicated in the south-eastern lowland region of the country.

Eritrea is a country with two different rainfall seasons consisting of different amounts of rainfall distribution. The western lowland and highland regions received the longest time of rain that extending from June to September. As the longest rain season covers the largest part of the country while the second rain season extends from October to March and is traditionally known as the Bahri rain season which means the Coastal rain. This rainy season is mainly common in the eastern lowlands region and the central and south-western regions received the highest amount of Bahri rain with less variability in contrast to the common rainy season that extends from October to March.

Figure 5.4 Mean annual rainfalls in Eritrea (1981-2010)



Source (Atlas, 2018)

5.3.2 Climatic or Natural Hazards

According to the Atlas report (2018), the main recognized climatic hazards or risks the country experienced are listed as drought and locust swarms. The report also mentioned that flooding is also seen rarely in the country however, flooding is not recognized as a common threat to the country. As flooding is frequently seen in a region with a high amount of rainfall the unavailability of repeatedly flooding phenomenon in Eritrea is a justification that shows the country's experience of low rainfall conditions. Although the rainfall structure of the country is low some exceptional areas experienced periodic floods these are the areas in the western, southwest, and eastern part of the central highlands. The data received from UNEP GRDP (n-d) witnessed that Eritrea registered less than ten vents of flood between 1999 and 2007 and this is mainly restricted to the lowlands/depressions.

The same as the rest of the Horn of African countries Eritrea is a country heavily hit by drought climatic conditions. According to reports from SPI, approximately every three to five years drought strikes Eritrea. Based on the analysis of SPI in the months that extends from June to September on the years of 2000 to 2015 mainly the central region of Makel and the coastal strip of the Southern and Northern Red Sea regions have experienced and suffered the consequence of drought unlike the other parts of the country. On the other hand during the October to the March seasons of 1983, 1987, and 1990. 1993. 1998. 2005, 2007, 2008,2009, and 2011 are the years when Eritrea was exposed to drought conditions. Generally, the report tells that Eritrea was exposed to a serious drought in the years 1984, 1985, 1989, 1990, 1991, 1994, 1995, 2003, 2004, 2007, 2008, 2009, 2011, 20012, and 2013 (Atlas 2018).

According to the combined report conducted by metrological Standardized Perception Index (SPI) and Agricultural drought Vegetation Condition Index (VHI) conditions showed that in the rainy season of the months that extends from March to May of 2009 Eritrea was exposed to harsh drought conditions while in the other years only some isolated areas were experienced severe drought conditions. In terms of the June to August season, serious drought conditions were witnessed in 2015 to some extent the same phenomenon also happened in the years 2011 and 2013.

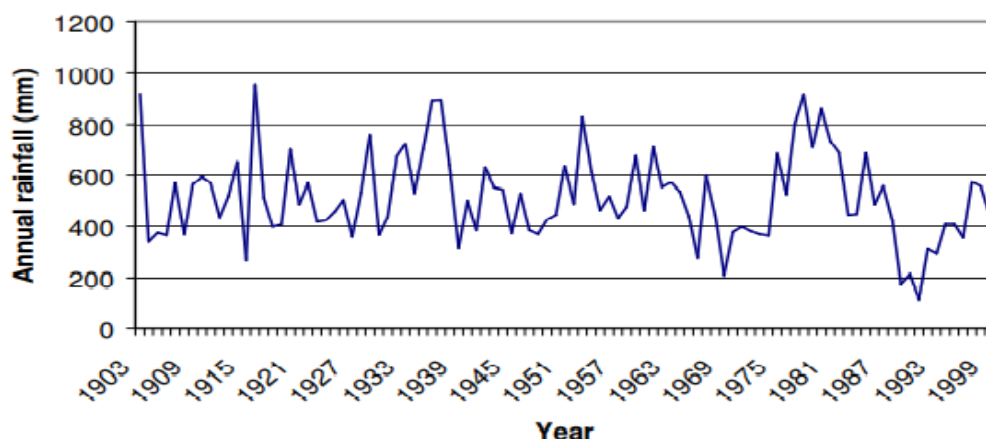
5.4 Climate and rain-fed crop production in Eritrea

According to the agro-climatic and soil parameters, Eritrea's agro ecological zones are divided into six zones. These zones are the Western Escarpment Zone, the South Western Lowland Zone, the Central and Northern Highland Zone, The Green Belt Zone, the North-Western Lowland Zone, and the Coastal Plain Zone. Because of its geographical location

and the land's physical structure or the landform structure, Eritrea receives a scarce, erratic, and irregular distribution of rain. There is a fluctuation of rainfall moving from the southern part of the country towards the northern part for example the annual rainfall declines from more than 700mm in the Southern part that borders Ethiopia to less than 200mm in the northern part that borders Sudan. As there is a variation in the amount of rainfall from season to season all over the country, the country also experienced two main rainy seasons known as summer (keremti) which covers the largest part of the country and the winter rainy season is common on the coastal plain region of the country. Due to the geographical location, the Eastern Escarpment zone which is part of the Green Belt Zone benefited from both the summer and winter rainy seasons.

The shortage of rainfall in a huge part of the country justified that a third part of the country is experiencing less than 200mm average annual rainfall and 90% part of the country obtains less than 600 mm (FAO 1994). Out of the six administrative zones of the country, Zoba Debub and Zoba Makel (Southern and Central zones) are known as dry sub-humid and the other administrative zones are classified as semi-arid or arid (MOA 2002a). Crop production in the country was hindered due to the unreliable and limited amount of rainfall the country received and this is mentioned by the study conducted by Cliffe (1992) who described the lack of enough amount of rainfall as the prime factor that hinders the production of crops in 1986 and 1987 at the same time the report from the Ministry of Agriculture demonstrated that the crop harvesting registered in 1993 was limited to 20% of the expected potential where the country can harvest this is an indication that validates the rainfall inadequacy that Eritrea experiencing is the key factor that leads to the failure of crop production. As figure 4.5 indicates that the annual rainfall in Eritrea is experiencing a high fluctuation. Based on the statistical analysis of the annual rainfall between the years 1913 and 2000 shown in figure 5.5 witnessed that in the past 100 years the level of rainfall in the country is not witnessing any drastic decline (Mebrahtu et al 2004). But the figure shows the availability of decreasing trend of rainfall in the last ten years of the report (FAO 2005).

Figure 5.5 Annual rainfalls in Asmara (Central Highland Zone)



Source Bereket (2005)

5.5 Agriculture in Eritrea

Agriculture is considered the most prominent economic activity in Eritrea. As the agricultural sector employs over 70% of the total population of the country it is easy to recognize the country as an agrarian nation. The combination of crop production and livestock production is considered the main foundation for food security for the majority of the population. However, due to the small-scale of the farms and low productivity adding to the traditional system of agricultural activity leads to low productivity and the sector's contribution to the gross domestic product of the country is estimated at around 16%. Based on history agricultural productivity is at its minimum stage this is due to the practicing of the traditional method of agricultural activities and restricted inputs mainly in the rural area. If the season is at its greatest condition the country has the potential to make 60 to 70% of the national food requirement while in a drought season the food production can decline to 25% of the national requirement (Atlas 2018).

Compared to the population size and the land size the country owns Eritrea is considered a well-gifted country. The highlands region of Eritrea accounts for around 16% of the total area of the country however the region accounts for more than 50% of the total rural population of the entire country. The majority of the highlanders are actively engaged in sedentary agricultural activities mainly crop production and due to the population density and the small size of arable land the region experienced a serious shortage of agricultural land. In terms of the lowland region even though it is the largest part of the country it is one of the most sparsely populated regions and it is the region that is mainly inhabited by pastoral and agro-pastoral people.

According to FAO (1994) and MOA (2002), the rugged topography of the highland and the unstable climatic conditions of the lowland region played a vital role in the decline of the agricultural activity in the country and make only 12% of the land to be suitable rain-fed agriculture. It is also reported that only 3.5% of the total land which is 29% of the potentially arable land is under cultivation. Despite the availability of vast and fertile land on the western lowlands which is attractive to rain-fed agricultural activities the land is still under-cultivated. Opposite to that in the highland region, the land with the potential to be cultivated is already under cultivation. Due to the combination of the availability of flat and fertile land and the moderate climatic conditions of the region the central highland is considered suitable for the practicing of rain-fed agricultural activities.

Due to the unstable and uneven distribution of rainfall all over the country, the practice of crop production and livestock rearing by depending on seasonal rainfall is not productive. In some cases, if the land receives good rain mainly in the western lowland area the possibility of having a good harvest on both crop cultivation and agro-pastoralism is great. Even though the traditional subsistence farming procedure is the most dominant agricultural activity in the country irrigational agricultural activity which is introduced by the Italian colonizers by the end of the 19th century is also practiced on a small-scale level. The use of irrigation as an agricultural activity is mainly applied by the diversion of small seasonal streams (spate irrigation system) and some are run depending on boreholes, wells, pond water, and dams.

5.6 Historical Context of Modern Eritrea and Colonization

Geography has granted Eritrea a pivotal location which is identified as one of the most strategic and volatile regions at the interface of the horn of Africa and the Arabian Peninsula. The Red Sea is one of the most popular sea routes that connect the commercial activity that links the west and the east. Serving as a significant bridge that connects important entities related to cultural, commercial, and developmental exchanges between African, Asian, and European countries gives Eritrea the advantage of being the natural access to the immense and major hindering lands of Ethiopia and Sudan. This strategic location gifted Eritrea unique geopolitical importance and put the country under the eyes and rivalry of external powers that shape the history and political activities in the country.

Historically, Eritrea was ruled by different foreign powers, the Italian colonisation occupied Eritrea in 1890, and then the British Military Administration controlled Eritrea in 1941. In 1952 Eritrea was under the Ethiopian federation, later in 1962 Eritrea was under the annexation of the Ethiopian Emperor Haile Selassie that led to the 30 years' war for independence which

started by the Eritrean Liberation Front (ELF). By 1970's the Eritrean People's Liberation Front (EPLF) was born.

After the end of the Second World War in the 1950s, most of the African countries which were under colonization had their independence however, in the case of Eritrea it is different. And this is associated with the geopolitical interest of the west. After the defeat of the Italian colonization with the defeat of the axis powers by the allied forces the annexation of Eritrea by interest groups was very imminent. Taking an action to annex Eritrea was very urgent and unanimous and this was orchestrated without the knowledge and without seeking any view from the Eritrean people. This is to fulfil the interest of certain groups for instance there was an American oil company called Sinclair Oil Corporation which is planning and engaging in oil drilling activities in the Ogaden Region of Ethiopia. Currently called the Somalia Region has strongly campaigned for the annexation of Eritrea. On September 27, 1945, the president of the Sinclair Oil Company inscribed a letter to the Secretary of state James F. Byrnes saying:

"Dear Mr. Secretary: My Company has only recently completed an agreement with the Imperial Ethiopian government for the development of petroleum in Ethiopia. I feel rather certain that you personally have been informed with a request to this agreement. Unfortunately, the country of Ethiopia is an inland country, with no direct water outlet for export shipping. Should we be successful in discovering oil, we would of necessity, be required to construct adequate pipeline facilities from Ethiopia to a suitable seaport, as well as an export shipping terminal if we are to proceed with our development program in Ethiopia, it is of vital importance that Eritrea should be recognized as an integral part of Ethiopia, as we would have a suitable seaport outlet. Our entire development program will seriously be delayed and affected should Eritrea be under the domination of any other power except Ethiopia. I, therefore, urgently request that your good offices support the demand of Ethiopia with respect to Eritrea" (Bidemariam 2020:84-85).

"Ignoring a confidential British report in its possession, which revealed that about 75 percent of Eritreans wanted independence, the US-sponsored, General and the UN General Assembly Adopted, Resolution, 390 (V)A(1950) on 2 December 1950, providing the federation of Eritrea as an autonomous unit with Ethiopia" (Welde Giorgis 2014). This is the outcome of the desire of the United States of America to maintain the fundamental and strategic base they own in Eritrea and keep their interest this is happening by ignoring the Eritrean's right to self-determination and the maintaining of peace and stability in the horn as a whole for the long-term. This is clearly expressed by the words of the US representative to the Fifth Session of the United Nations General Assembly John F Dulles by saying that:

“From the point of view of justice, the opinion of the Eritrean people must receive consideration. Nevertheless, the strategic interests of the United States in the Red Sea Basin and world peace make it necessary that the country (Eritrea) be linked with our ally Ethiopia” (Welde Giorgis 2014:100). This statement clearly explains the injustice work done both by the United States and the United Nations toward Eritrea and its people. To correct the denial of having self-government and the injustice done towards the country and its people, Eritreans decide to fight for their rights, and a bloody war that run for thirty years started between Ethiopia and Eritrea in 1961 and come to an end by 1991.

5.7 Self-reliance and the State Emergence

In 1978 during the first National Democratic Program the EPLF leadership declared to follow a socialist ideology, which played a vital role on shaping the policies of independent Eritrea which is still practiced by the government. Hirt and Mohammad (2021: 25) and lyob (1995) indicated that “Economically, the EPLF pursued a self-reliance approach because it was unable to raise substantial support from western governments due to its socialist agenda” (Hirit and Mohammadl 2021: 25).

“The National Democratic Programme of 1987 favoured self-reliance as a major attribute of the EPLF’s development strategy, including the dedication to a planned economy (EPLF Political Report and National Democratic Programme, 1987: 60). The EPLF’s terminology reflected common ideas of the political left of those times (see, e.g., Amin, 1976; Senghaas, 1977), and many European and US leftists expressed their support of the armed struggle through various publications (Davidson and Cliffe, 1980; Sherman, 1998; Pateman, 1990; Connell, 1997). In 1991, the EPLF won a military victory over Ethiopia, and Eritrea became independent in 1993” (Hirt et al., 2021:25)

As a result, post-liberation states have emerged as unusually strong within the geographical context of sub-Saharan Africa, and Eritrea has been labelled ‘Africa’s strongest post-colonial state’ (Dorman, 2006, p. 109). Unlike most former colonial territories on the African continent where an ‘antecedent state wittingly [forced] its inhabitants into a contrived nationhood’ (Zelinsky, 1988, p. 7), Eritrea had to ‘demonstrate its status as a nation before it could be granted its own state’ (Hoyle, 1998, p. 384; see also Taddia, 1998). Being a nation is regarded here – following Anderson’s (1991) dictum of the imagined community – as a form of ‘social consciousness, and the nation is only born when enough people (...) believe in its existence’ (Zelinsky, 1988, p. 6). It was in this process of ‘designing’ the Eritrean nation that the EPLF has been extremely successful. In offering a specific interpretation of Eritrean history partly based on ‘inventing’ pre-existing traditions where Muller (2012) stated

'Eritreanness' was identified as distinct identity comparing to other identities, this is due to the EPLF's hard work that overcome the deep-seated divisions which is built in a multi-ethnic and multi-religious society (Bereketeab, 2002; Clapham, 2000; Pool, 2001; Tronvoll, 1999). Based on experience of pre-liberation conflicts in other parts of sub-Saharan Africa they witnessed both consolidation of nationalist feelings (see Cooper, 2002), and a failure on achieving unity among the freedom fighters and ended up in factionalism and internal wars (Clapham, 2000).

"A variety of factors have made it possible for the EPLF to create an Eritrean identity based on values of unity, sacrifice and self-reliance and thus produce sustained nationalism of a different nature. In addition to its insistence on a unifying ideology and the successful promotion of a national myth the EPLF proved highly effective in relation to two parameters of state building through war: establishment of central control over resources, coupled with the creation of effective structures of governance both inside the movement and in relation to the wider population" (Muller 2012).

Much has been written about the achievements of the EPLF in relation to the administration of rebel-controlled areas. In particular the provision of services such as health, education, and vocational training under conditions of war and scarcity have been emphasised (see for example Davidson et al., 1980; Fekadu, 2002; Firebrace and Holland, 1985; Frankland and Noble, 1996; Gottesman, 1998; Iyob, 1997b; Papstein, 1991; Pateman, 1990). The EPLF version of Eritrean nationalism was not necessarily shared by all sectors of the population (see for example Mahrt, 2009), nor did it entail the complete dissolution of other nationalist movements in opposition to the EPLF (see Connell, 2005; Schröder, 2010). But it did become the hegemonic national narrative commanding what Gramsci calls 'spontaneous loyalty' among most Eritreans globally.

5.8 The Warsay-Yikalo Campaign of Nation Building Strategy

In 2002 the Eritrean government introduced the Warsay-Yikealo Development Campaign (WYDC). Whereas the term Warsay stands for "*follower or inheritor*" that represented the young generation of the national service group while the term Yikalo means "*can do*" that stands for the wise elderly generation to recall the freedom fighters. "It is understood that, Eritrea is not starting its economic recovery program with the declaration of Warsay-Yekeaalo Program. It has been engaged in a silent recovery program since it gained its independence in 1991. Thus it is an endeavour of extension to the existing recovery programs" (Rena 2006:4).

The campaign was evaluated by the Eritrean government three years after its launch and claimed as a commendable program with certain shortcomings that can be solved with experience in the future (Rena 2006). The objective of the program was to embark up on all developmental sectors which are damaged by the war and build stable Eritrea. The main target of the campaign was to focus on various developmental programs which are listed as “infrastructure renovation and development, agricultural intensification and modernization, raising industrial output, mining schemes, the tourism sector, human resource development etc” Rena (2006:3). The government believed that the Warsay-Yikalo Developmental Campaign as the Eritrean Marshall Plan strategy that can act as an engine that can lead to the economic recovery of the nation.

By the introduction of the WYDC the leadership tried to restore experiences of the armed struggle. However, different expertise and international organizations considered the campaign as a tool used to exploit the existing manpower by the so called the PFDJ who owns several construction firms that operate mainly with national service conscripts and have thus “free access to unpaid skilled, semi-skilled and unskilled labour” (Kibreab, 2009b: 287). This means that the government and certain higher military officers and the ruling party so called PFDJ are the sole benefiteres of the campaign (Kibreab, 2009a, HRW, 2011) while the country’s social structure has been harshly damaged (Hirt and Mohammad 2021).

Unlike the above mentioned arguments others indicated that the effort of the Eritrean Defence Force on becoming the main supplier of the human resource of the Warsai-Yikeaalo Development Campaign is huge by witnessing that “members of the Eritrean Defence Force (EDF) in coordination with the people are making big contributions in all sectors of the economy. These dedicated individuals are building and developing their nation on all levels, from exertion of physical effort to intellectual sacrifice with just one clear mission: to develop Eritrea” (Rena 2006:3).

Similarly, one of the senior government official veteran General Sebhat Ephrem explained foundation of the national service as follows: “Even though each of the agelglot [national service conscripts] has between two and three children, they only receive 500 ERN [33 US\$] per month. How do they do it? Their reward is not a salary because the amount they receive is insignificant. Instead, patriotism (hilina) is the driving force. If a private firm were to take over, it would be solely driven by pecuniary interest rather than by patriotism” (Kibreab, 2017:65, Hirt and Mohammad 2021:29).

Human Rights Watch (2009) reported that due to the open-ended conscription of National service majority of the Eritrean youth are under semi-enslavement (Connell 2011). However, the government is against this narrative and indicated that the repeated sanctions imposed

to Eritrea the government and the people of the country have adopted the culture of survival under sanctions by developing the experience of relying in the internal resources and adjust to the new situation and other challenges through the experience gained and learned on the past. The government has the belief of relying in internal resources and allies who have the desire to stay with us and cooperate.

5.9 Eritrean and Ethiopian Border Conflict

Sharing geographical, historical, and cultural resemblances Eritrea and Ethiopia own a long persistent and challenging relationship which is loaded with a narrative of conquest, war, and conflict. Historically the Eritrean People's Liberation Front and Tigray Peoples Liberation Front had a strong political and military bond and this makes it hard to believe that the border conflict of 1998 had happened. Before Eritrea got its independence both the EPLF and TPLF had a common enemy that is the Derg regime. The 1991 independence of Eritrea brings the end to the injustice and forced union of Eritrea and Ethiopia and the making of two separate states of Eritrea and Ethiopia. Welde Giorgis (2014:496) mentioned that " Eritrea and Ethiopia maintained friendly relations during the seven years of peace between the liberation of Eritrea in May 1991 and the outbreak of hostilities in May 1998". Before the May 1998s incident, both countries built a joint commissions and signed several agreements that includes mutual defence pact, and actively engaged in promoting closer cooperation in the economical, political, security, trade, and social sectors. Both Eritrea and Ethiopia set off a scheme to organize diplomatic policy and political activities on regional issues that concern both countries. Some of the main issues that could be mentioned at that time are the Somali Issues, the danger of the Islamic militant and political issues in Sudan, and the renewal of the Inter-Governmental Authority on Development (IGAD). The engagement of the two states on different issues brings great hope that both Eritrea and Ethiopia will pave the gate to bringing peace and security among the different countries in the region At the same time, it was mentioned as a point of reference that can generate political cooperation and economic integration among the countries of the Horn of Africa.

Although Badme and its surrounding area were the focal points of the initial clash once the war started it escalated on three major fronts which are the Bure Front the Mereb-Alitena Front and Mereb-Setit. At the same time, there were three main battles in different time spans the first round was from May to June of 1998 and the second round of the war was between February and March of 1999, while the final battle or round was between May and June of 2000.

During the three years of non-stop war; the causality was very high on both sides. For instance, in the case of Eritrea, 20 000 members of the army lost their life. At the same time, more than a million Eritreans were displaced inside the country and tens of thousands of Eritrean civilians fled to neighbouring Sudan. It was also reported that more than 80,000 Eritreans were expelled from Ethiopia to their country of origin Eritrea by the Ethiopian Government. At this point, Ethiopian Prime Minister Meles Zenawi tried to defend the Ethiopian government's decision to expel or deport Eritreans by appearing on the Ethiopian National Television and in his interview conducted in July 1998 by saying that "any foreigner, whether Eritrean, Japanese, etc., live in Ethiopia because of the goodwill of the Ethiopian government. If the Ethiopian government says 'Go, because we don't like the colour of your eyes,' they have to leave" (Welde Giorgis 2014). During the deportation properties and hard-earned money of the Eritreans were robbed and the wealth that they inherited by working hard for years was stripped. This is not the only harm they created families were broken apart and life was becoming more disrupted and miserable.

War is war nothing can be gained from war the same is true in the case of Eritrea and Ethiopia. The chaos that the war created in the lives of Eritreans is immense it disrupts the priorities of the country and the youth were forced to go to the trench on the frontline and defend their nation instead of continuing their nation-building activity of rebuilding the war-torn country. As war is so hostile it stops or paralyzes the progress of the national economy and shifts the developmental programs of the nation and puts more emphasis on national security. In addition to this, the war was very distractive and it destroys different developmental infrastructures and kills different opportunities the productive manpower started to migrate in search of a job and better life.

The war comes to end with the Algiers Agreement. This agreement was signed in Algeria's Capital city Algiers where the USA, African Union, European Union, and the United Nations act as witnesses and guarantors of the peace agreement which was signed between Eritrean President Isais Afwerki and Ethiopian Prime Minister Meles Zenawi on 12/12/2000. "*This agreement terminates the hostilities between Ethiopia and Eritrea. The agreement, inter-alia, establishes a neutral boundary commission to delimit and demarcate borders based on colonial treaties and calls for an investigation regarding the origins of the conflict. It also establishes a claims commission to decide by binding arbitration all claims for loss, damage, or injury by one government against the other or by nationals against the parties*" (Bidemariam 2020:144).

Boundary disputes are a common issue elsewhere globally it is not only limited to the case of Eritrea and Ethiopia. In terms of Africa, the continent is scrambled on the Berlin

conference of 1885 where the colonial powers divided the whole continent based on their interest without the concern of the inhabitants of the region or the local geography of the region they controlled. Ethiopia and Eritrea shared a common border which was delimited based on three agreements that were signed in 1900, 1902, and 1908. The integrity of this border stayed unchanged for a long period and was endorsed as it is by the United Nations in 1952. Both Eritrea and Ethiopia were obliged to respect the blessedness of the boundaries a country inherited from the colonial powers during the time of independence and this was endorsed by the OAU resolution which was adopted at the Cairo Summit of 1964. Both the Ethiopian and Eritrean governments crucially agreed that the decision of the Boundary Commission is a “*final and binding*” decision and to respect the territorial integrity and sovereignty of each other.

5.10 The Background of the Sanction

On the eve of Christmas which is on the 23rd December of 2009 the United Nations Security Council (UNSC) passed Resolution 1709 and imposed sanctions on Eritrea. The UNSC resolution starts with the statement saying that “Gravely concerned about finding that Eritrea had provided support to armed groups undermining peace and reconciliation in Somalia and that it had not withdrawn its forces following clashes with Djibouti in June 2008. The Security Council today imposed an arms embargo on the country, in addition to travel restrictions and a freeze on the assets of its political and military leaders” (Bereketeab 2013 147).

Former US Ambassador to the United Nations Ambassador Susan Rice gives a briefing to the media on the eve of Christmas 2009 and addressed the world by saying that “*I want to talk to about the resolution we just adopted imposing sanctions on Eritrea. This was an African initiative. It was the consequence of a decision taken by the African Union.....From the United States' point of view; let me say that we have for many, many months sought a constructive dialogue with the government of Eritrea... We did not come to this decision with any joy - or with anything other than a desire to support the stability of peace in the region* (Bidemariam, 2020:149). It is obvious the value and damages the sanction created to the state of Eritrea and its people are massive and the government of Eritrea believed that there was not any constructive engagement or dialogue with Ambassador Rice regarding this issue and the resolution was based on baseless false acquisitions.

The alleged reason or pretext for the sanction was that Eritrea was suspected of supporting Al-Shabaab which are terrorist group functioning in Somalia and the border dispute with a neighbouring country Djibouti is also another issue raised as a measure of the sanction. In 2011 the issue was further expanded through the United Nations Security Council

Resolution 2023 (2011) which the council adopted at its 6674th meeting on 5, December 2011). These sanctions pretexts are based on baseless false accusations and this is proved by the statement made by Michael Keating who is a Special Representative of the United Nations Secretary-General (SRSG) for Somalia. Michael Keating's statement stated that "I have seen no evidence of Eritrea supporting Al-Shabaab " (Amhazion 2016). Similarly, the Qatari Minister of State for Foreign Affairs represented by H.E Sultan Bin Saad AL Muraikhi started his statement by saying that the "resolution of the border conflict and between Djibouti and Eritrea, achieving a fair and peaceful settlement based on principles of good neighbourliness and mutual respect for territorial integrity and sovereignty within the internationally recognized borders and the release of all Djiboutian Prisoners of war" (Amhazion 2016).

Continuously for a long time, the UN's Somalia Eritrean monitoring group (US SEMG) reports have repeatedly informed that there is not any proof by saying "no evidence of Eritrea's support for Al-Shabaab". Regarding the Djibouti issue both Eritrea and Djibouti have signed a comprehensive agreement where Qatar was the main mediator of the agreement. Former U.S. Assistant Secretary of State for African Affairs Hermon Cohen said that the sanctions imposed on Eritrea have "no basis in fact" and added are a case of "bullying" this can be proved by the US behaviour when the country used its veto power voted against and blocked the lifting of the sanction in 2014 while 14 members of the Security Council are in favour the lifting of the sanction.

The sanctions imposed against Eritrea are not only illegitimate they are also counterproductive and the sanctions promoted and supported confusion and mistrust. The sanction also played a vital role in diminishing the available possibilities for promoting fruitful corporations or productive partnerships. Sanctions also stunt the development of different institutions. Mainly the sanction halts the investment activities and socio-economic growth of the nation. Broadly the sanction played a great role in destabilizing the Horn of Africa by contributing to the needless rivalry, conflict, and regional insecurity by giving a chance or excuses for the interference of external forces in the region.

The initiative to call upon the sanctions originated from the head of state of the Intergovernmental Authority on Development (IGAD) during the summit of the African Union (AU) held on July the 2nd 2009. The members of IGAD countries submitted the request to the African Union where the AU certified the request and proposed it to the UNSC. The fifteen members of the UNSC passed the resolution and Uganda is the lead country to bring the issue to the table. Eritrea was aware that the majority of the IGAD countries were standing against it and wanted Eritrea to be punished. Eritrea strongly stands on what it believes and

said Somali Issue belongs to Somalia and the solution comes from Somalia by itself. This is against the interest of the other IGAD countries. For example, Uganda is a country that owns thousands of soldiers who are acting as peacekeeping forces in Somalia so these forces are a source of foreign currency for the country. In terms of Kenya, it is a country that is always under the threat of Al Shabaab so it has a fear of security uncertainty. While Djibouti as a country with a border dispute with Eritrea since 2008 strongly supports that Eritrea must be punished under any means. On the other side, Eritrea believed that the reason behind this resolution is motivated and controlled by Ethiopia and the USA (see E-SMART 2010). Ethiopia as the main leading power of IGAD believes that any success Eritrea gains is against its interest and believed that whatever the cost is Eritrea has to be punished. When the sanction resolution was imposed Eritreans all over the world were angry and they stand against the resolution the Ministry of Foreign Affairs of the country labelled it as a “shameful day for the UN” (MFA 2009). The Resolution 1907 of December 2009 which was adopted by the UNSC was supported by 13 countries China abstained and Libya was the only country that voted against it. The Libyan permanent representative to the UN clarified his country's stand by saying that *“the path adopted in the resolution is not realistic but hasty. Sanctions are not the appropriate means of sorting out the existing problem. Rather it will aggravate the situation prevailing the Horn of Africa”* (Africa News 2009). On the other side, the permanent representative of China to the United Nations expressed the stand of his country by saying that *“the UN Security Council should act prudently in imposing sanctions and ... the adoption of the resolution on sanction against Eritrea by the Security Council should not replace diplomatic efforts to resolve disputes through dialogue and negotiations”* (China Daily 2009). The position of both China and Libya could be the outcome of the negative experience they had with the sanctions they faced before (Wenping 2010:161, U-Jin Ang & Peksen 2007: 136).

The MSG report related to the Security Council Resolution 1676 (2006) indicated that at least 28 different arms ammunition and military types of equipment were supplied to the Islamic groups by Eritrea. It also reported that Eritrea was supporting the Islamic Court Union (ICU) by providing military training and troops. The report said that

- I. On 26 April 2006, a shipment of arms consisting of AK 47 assault, PKM machine guns, RPG7s, and a variety of ammunition arrived on a dhow at the seaport of El Ma'an.
- II. On 6 May 2006, at about 0500 hours an Eritrean military aircraft Antonov- landed at Dhusamareeb, Galgaduud Region, Somalia (MGS 2006:11)

Based on the above-mentioned evidence that indicated the exact dates of shipments and the amount and type of ammunition was an indication that tells strong evidence was collected by the MGS however the MGS failed to bring any documentation that supports the claim and this makes the credibility of the information they collected in doubt. The main source of information gathered by the Monitoring Group on Somalia and Eritrea (MGSE) was based on anonymous information which is hard to be verified openly and transparently.

Following Kenya's invasion of Somalia in 2011 Kenya suspected that three Eritrean Planes are transporting weapons and landed in Bidoa a city which is controlled by the terrorist group Al-Shabaab and reported the case to UNSC on the other hand Eritrea opposed the allegation and sued Kenya for the defamation it created. IGAD as an organization that is led and controlled by Ethiopia has also positioned against Eritrea and accused the country by claiming that Eritrea is supporting the terrorist group and alleged the UNSC to take decisive action against Eritrea. In reality, the truth on the ground is different from what all the accusers are thinking and the MGSE found no evidence that proved the availability of any shipment of weapons to Al-Shabaab or the terrorist group in Somalia Eritrea. This was mentioned by the "SEMG's preliminary assessment is that these reports were incorrect and the alleged deliveries to Baidoa probably did not take place" (Daily Nation 2012).

Different reasons make the allegations of Eritrea's support of Alshabaab with different types of equipment a failed accusation because Eritrea and Somalia don't share any common border. This makes the shipment or the smuggling of different weapons unattainable. As the region is located in one of the most strategic geographical locations the region is continuously under tight international surveillance which makes small countries like Eritrea move with full freedom (see Bereketiab 2009). The Horn of Africa which comprises countries like Ethiopia, Djibouti, Eritrea, Somalia, and Sudan is known for the presence of a large military to overcome the fear of piracy and the so-called war of terror in the region. Countries like France, the USA, German, China, Russia, Spain, Dutch, and Japan which belong outside the region own military bases to keep their interest and influence on the region operating on the Gulf of Aden, the Red Sea, and the Indian Ocean. Knowing this reality it is unthinkable for Eritrea to supply army equipment to the Somalia terrorist group.

Eritrea's position towards Somalia is clear it opposes the intervention of external forces mainly Ethiopia and the USA and believes that Somali people can resolve their internal affairs by themselves without the interference of others. As it is mentioned earlier the case of the border dispute with Djibouti was also seen as the second justification that leads to the imposing sanction on Eritrea. The disagreement between Eritrea and Djibouti can be seen in terms of regional and international dimensions. Internationally Djibouti has considered an

important ally to the US and France and the influence of these two superpowers in the global arena is eminent. Similarly, Ethiopia which is a close friend to Djibouti has a great influence on the Horn of Africa and it is the country that controls the remote IGAD position is obvious. A report by EPCD (2008;3) stated that “France which has a military base and a defence agreement with Djibouti, has come in with logistical and military support. It has to be assumed that Ethiopia would also get involved on the side of Djibouti should the conflict escalate further, as Ethiopia depends on Djibouti to access the sea.” This was witnessed practically and several sources noted that Ethiopia was “prepared to secure its vital trade corridor with the Red Sea port of Djibouti in the event of any conflict between Djibouti and Eritrea” (*Sudan Tribune 2008*). As it was said that the “*enemy of my enemy is my friend*” and Ethiopia has a border conflict with Eritrea adds more complexity to the issue. Another concern that makes the issue more complicated is the involvement of the big powers like France to keep their interest safe and boosts the Djiboutian army with modern military artilleries, tanks, armed vehicles, aircraft, and others.

The sanction imposed against Eritrea brings back the old memories of the 1950s and the same image was circulating in the Eritrean communities inside the country or diasporas. In the last sixty years, Eritrea was targeted by different superpowers' misdeed actions and the lack of taking any decisions or actions against the mistake imposed against Eritrea by the international community mainly the USA, the UK, and as large the UN. The first mistake they made was the 1552s forced federation of Eritrea with Ethiopia was largely accepted by Eritreans as a strategy designed to serve the interest of the USA (Wrong 2007a, E-SMART 2010). This was followed by Ethiopia's obliteration of the federation despite the United Nations was the main sponsor of the federation and it was the obligation of the United Nations to protect it (Habte Selassie 1989, Yohaness 1991, Gebre-Medhin 1989, Iyob 1995, Bereketeab 2007). This issue was one of the core points that lead to the thirty years of a bloody war for independence this war was also ignored by the international communities and the UN and the superpower countries opted to be silent as nothing was happening. Then the same history was repeated when Ethiopia rejected the United Nations Security Council resolution of April 2022 on the border conflict verdict, but no one of the big powers have spoken out to force Ethiopia to accept the decision. Several scholars and experts considered that the conflict between Eritrea and Ethiopia is the core issue that leads to uncertainty and conflict in the Horn of Africa. As a result finding a solution to the conflict between Ethiopia and Eritrean will be a path toward the resolution of other conflicts in the region (ICG 2007, 2008, Reid 2009, Bereketeab 2009, Lyons 2009). Knowing that the outcome of the end of the conflict is restoring peace to the region, the United Nations Security Council never took an action to force Ethiopia to execute the verdict.

According to Eritreans the Resolution 1907 was considered as one of the modern insults proposed to Eritreans by ignoring the hard work done by Eritreans to achieve their independence and believed that the sanction is mainly targeting the standing of Eritrea as a sovereign nation. Based on those perspectives Eritreans Diasporas started to organize different initiatives and challenged the sanction and organized different demonstrations by advocating “*Say No to Sanctions against Eritrea*” (AGE 2010). The objectives of the demonstrations organized by Eritrean Diasporas are explained as:

Standing against the sanction means avoiding the existing obstacles or challenges for the future generation by clearing all the mess of today. Demonstrating against the sanctions expressed that doing what they enquire you to do is an indication of compromising your freedom of choice. Demonstrating against the sanctions imposed against Eritrea also gives a broad image to those who proposed the sanction that Eritrea will never knell down by the sanctions imposed on baseless lies and will fight thoroughly until the end. Let’s not forget that some opposition Diasporas groups support the sanctions imposed against Eritrea and to some extent jeopardized the unity of Eritreans outside the country.

Chapter Six

Eritrea's Collective of Governance and Self-reliance policy on food and water security

This chapter addresses the history of Eritrea's self-reliance policy which started before the independence era and is still practiced by the country. This chapter also explored the role of the different institutions under the state's leadership in implementing the policy that leads to achieving the desired objectives of food and water security. As the developmental projects of the country are constructed with the collaboration of different institutions and the local communities this collaboration process is addressed in detail and assessed based on the collaborative governance model which is adopted by Ansell and Gash (2008). Moreover, the chapter examined the existing linkage between the Eritrean self-reliance model and the collaborative governance model by replacing the existing variables of the process of the collaborative governance model with the process of the Eritrean self-reliance model. The variable which is expressed as the outcome in the collaborative governance model is replaced by two concepts in the case of the self-reliance model and these are mentioned as the economic contribution of the projects and the geopolitical sanction imposed against Eritrea by following the self-reliance policy.

6.1 Economic Policy of Eritrea

Eritrea is very much a command economy where things are planned with military precision. In contrast to its neighbours, Eritrea's agricultural model has led to self-sufficiency, and its economy is quite rapidly with the bonus of new mining ventures makes Eritrea one of the fastest developing economies by the year 2011 (New African Magazine, 2011).

Once the Eritrean president Isaias Afwerki was interviewed by the New African Magazine, he mentioned that "Eritrean philosophy is based on realistic approaches to dealing with challenges" (New African Magazine, 2011). Speaking about aid he declared that "aid was fashionable at one point in time, but with the experience we see that in fact, aid been disabling for Africa" and the president believe that " the resources are there, the endowment is there, and yet there is still no infrastructure, our manufacturing and industries are not globally competitive, and we have been unable to exploit the advantage we have in terms of national resources, mineral resources, geography and water to change the quality of life in Africa" (New African Magazine, 2011).

In the process of nation-building and the making of a common identity, the concept of self-reliance is one of the major significance whatever the quality of its foundation. From the Eritrean perspective, self-reliance is an important precondition for the making of an independent and advanced economy. The principle of self-reliance is not all about practicalities, at the same time it expresses a strong will to manage structural, and social development, and activities like foreign assistance (Simonsen 2003). According to Tesfagiorgis (1993), self-reliance means principally to depend on one's own human and material resources and be the owner of the self path of development. In 2019 Carol Pineau in her interview with the Eritrean newspaper witnessed that "Certainly, in Eritrea the experts on Eritrea are Eritreans. Eritrea owns its development and its own story. In reality, it doesn't happen in a lot of other countries. They don't take charge the same way. But to me, this is what it should be like and it is something that I do admire (shabait.com 2021).

The People's Front for Democracy and Justice (PFDJ) in the National Charter of 1994 stated that self-reliance is the basic principle in all departments of political, economical, and cultural sectors. In terms of the political sector, it is the pursuit of an independent line and gives priority to internal issues. On the side of the economic sector, it is depending on the internal potential and develops internal capacities. Culturally the principle of self-reliance expresses the owning of self-confidence and develops an individual's cultural heritage. Self-reliance does not mean isolating oneself from the international community. It only means being as an independent and self-confident player as possible in the international community" (GebreMichael 2016:54).

The PFDJ national charter (1994) stated that the history of the Eritrean liberation struggle is the history of self-reliance. The organization succeeded because it planned based on its own experience and circumstances without copying any model of other revolutionary movements or nations in the field of politics, foreign policies, or military strategies. All the challenges and problems approached in the daily activities were dealt with and sorted internally without seeking any help from outside professionals. As this is the cornerstone that leads to victory it is accepted as a pride of the nation and this tradition continuation is vital for national development. The charter also cemented that "we must chart our own programs which work for our conditions, going to the market for ideas in vogue can only make us victims of the vagaries of fashion" (PFDJ national charter 1994:12). The charter didn't deny the need for expertise from outside however the nation has to put more emphasis on the development of national expertise and rely on its own expertise potential. It is also believed to challenge the cultural tendency of worshipping the whole thing foreign and avoid imitation of foreigners as it is a common phenomenon in some members of the youth community.

At the moment it is very hard to persuade the developed west that the developing countries have the skills to solve their economic, political, and social problems. That is why the international community regularly prescribes solutions for them however they didn't find a cure until now. Eritrea is challenging that way of thought by shouting and saying "we can do it on our own if you could only believe in us and give us the chance to do it in our own way!" (GebreMichael 2016:54). That is the reason why the Eritrean president said "Aid should be a temporary dose, like aspirin, or temporary drug with appropriate regulation to limit the time frame for its dosage or you will get a habit. It is better to take a bitter pill to cure the disease rather than have false drugs that will develop the habit of dependency (Eritrean Profile, March 21, 1998).

Eritrea has embarked on an exceptional way of dealing with the issue of aid. This path guarantees a new concept of donor-recipient relations which disagrees with the term donor-recipient relations and replaces it with the term partners in development. The Eritrean government had verified both verbally and practically that it will make an agreement toward foreign aid projects and demonstrate the position of a partner instead of a passive receiver of foreign money and advice. The government of the state of Eritrea indicates that aid should not be the source of dependency but a contributor to sustainable independence. Being free from dependency boosts individuals' independent thinking, innovativeness, perseverance, and pride in work and struggle (Firebrace and Holland, quoting EPLF, self-reliance in Economic Field 1992). The government identified the danger behind foreign aid dependence and its extended conditionality; it also recognized the unnecessary impacts that may be applied by foreign countries and Non-Governmental Organizations (NGOs) in the internal activities of the government (Desta 2009). In 1994 the Eritrean President, President Isaias Afwerki informed a German journalist by saying that: "Our relations with the European Union have suffered from its conventional approach, from its conditionality. (Hirt and Mohammad 2021:26).

6.2 Eritrea's Self-development Strategy

The developmental strategy of the country on attaining sustainability on all sectors is directed by the doctrine of self-reliance and "Eritrea has fostered a conducive environment for sustainable development that promotes inclusive, whole-of government, whole-of-society approaches, leverages the country's rich diversity and wealth of local, indigenous knowledge systems, and catalyzes collective actions and contributions from all regions, communities, and groups" (Ministry of Finance and National Development 2021).

The priority of Eritrea's national development is undoubtedly spelled out in its human resources, infrastructure, and food security schemes and policy statements (AfDB 2012). Similarly The Director General of Water Resources Department of the State of Eritrea Mr, Mebrahtu on his statement addressed to the UN Water Conference indicated that "The immediate development priority of Eritrea is to meet the basic needs of its population through achieving economic stability, rehabilitating and expanding infrastructures that will contribute to improving the living conditions of our people" (Tesfanews 2023).

Eritrea's focus on self-reliance policy is exceptional which is not experienced in other African countries. The government strongly argues that development cannot be achieved through aid but can be attained through trade and investment with development partners (GebreMichael 2016).

The government's development and poverty reduction strategy put more emphasis on securing opportunities for the entire population of the nation by speeding up balanced economic growth in all regions of the country. The strategy also encourages the participation of all members of society in the process of national development (GoSE 2001). There is a strong belief by the government that in the long run poverty can be eradicated by encouraging and developing the skills of the poor via education and vocational training which can add value to generating sustainable employment and income-generating opportunities through economic expansion.

The Lagos Plan of Action for the Economic Development of Africa in 1980 drafted a plan to restructure the economy by depending on twin doctrines which are national and collective self-reliance and self-sustaining development (ECA 2003). Self-reliant development in Africa requires and demands universality, politics of consent and consensus, the politics of conviction and commitment, and the politics of compassion and accountability (ECA, 1990).

The Eritrean government argues that aid is not a solution for the collective development problems in SSA and stressed that aid has an impact on the recipient countries in three ways. The first impact expressed that the endless demand for aid put the recipient countries in a bargaining position. This makes the suppliers of aid dictate several, conditionality's in which aid can be supplied. The second one implies that the aid donors start to intervene in the recipient's internal issues for example they started to intervene in the recipients' fiscal, monetary, and development policies (Chang 2008). The third impact of aid is the problem of repayment of the debt which puts the recipient country in a weak bargaining position, as aid reduces the capacity of the recipient countries, and repaying the debt ties their hands, and covering the debt becomes their main agenda.

Eritrea is working hard in the fields of soil and water conservation and afforestation as part of the climate change program. The government is confident that it is going to achieve sustainable development goals ahead of time (UN, 2017). The Eritrean foreign minister in his speech indicated that “in its ambitious development program, Eritrea avoids dependency, and relies first and foremost on its people and domestic resources. At the same time, Eritrea welcomes and encourages cooperation and partnership” (UN, 2017: 4). This means that the Eritrean self-reliance policy has a strong belief in mutual interest via cooperation and partnership with different non-governmental organizations instead of completely depending on foreign aid.

6.3 Developmental progress in Eritrea

At the beginning of 1990s, expectation towards Eritrea was high and was considered as an inspiration of hope (Ottawa, 1999), and international donors were ready to accept and follow to the needs of the leadership. For instance, The UNDP (United Nations Development Program) (1997) stated that “Eritrea had an excellent track record in program execution and financial accountability” (Hirt and Mohammad 2021:26). However, after quite a few years Eritrea is criticized and named as a rough state which is ruled by an authoritarian rule which is obsessed with the presence of a giant Ethiopia as its neighbour and has a border conflict that has the potential of raising tension between the two countries at any time (newafricanmagazine.com 2011).

Before 2005 the unpleasant relationship with the U.S.A., EU, AU and other member countries of the United Nations Eritrea used to have a strong relationship with them. The soured relationship can be due to the restriction of the different NGOs from their activity in the country. As it was officially announced, “In May 2005, the government published a Proclamation barring NGOs, both domestic and foreign, from getting funding for “relief” or “rehabilitation” purposes from the United Nations, or other organizations, or with a bilateral agreement (A Proclamation 145/2005, 2005) (Redae, 2019:20)”.

Eritrea is always under the radar of different organizations and the country is always ranked as the worst performer in different humanitarian or developmental activities for instance the Newafricanmagazine.com (2011) indicated that the Human Right Groups repeatedly positioned Eritrea as one of the lowest performers. Even though Eritrea was considered the worst performer in different humanitarian aspects and media outlets by different organizations the success that the country registered in several developmental aspects has been unreported by these organizations. New African Magazine (2011) reported that Eritrea as a country may attain the UN Millennium Developmental Goals (MDGs) in advance of

2015. The Magazine also witnessed that the country has achieved substantial success in both the health and educational sectors depending on the self-reliance model of the country. The New African Magazine (2011) also indicated that the famine of 2011 that affected the Horn of Africa is broadly broadcasted across the globe however, Eritrea which is not mentioned in the report is not affected by the disaster and this is due to its introduction of a strong agricultural strategy and its resilient economy which is achieved independently without the interference of any foreign donor. Similarly the United Nations Office for Humanitarian Affairs, UN-OCHA also revealed that 22.4 million people in the Horn of Africa region need food aid. Based on the statement, 700,000 people in Kenya, 1.6 million in Somalia, 6.1 million in South Sudan, 7.9 million people in Ethiopia and 6.2 people in Sudan require food support (Tesfamichael, 2017). However, Eritrea is also exempted from this report this is due to its hard work in achieving food and water security. According to WFP “the failure of four consecutive rainy seasons has pushed populations in Kenya, Ethiopia, and Somalia to the brink of famine” (BBC News 2022). While Eritrea is different the country is on the brink of achieving food and water security in the coming five years. The Eritrean government makes clear the nation's vision of development in the 1994 National Charter by indicating, “Our vision is to eliminate hunger, poverty, and illiteracy from Eritrea. Our vision is for Eritrea to preserve its identity and uniqueness, develops a commitment to family and community care, and by advancing economically, educationally, and technologically, finds itself among the developed countries”(Shabait.com 2022).

Kidane (2016) who is the economic advisor on the Ministry of National Development assessed the Eritrean economic progress over the previous 25 years and gave detailed information by looking at different governmental sectors such as education, healthcare transportation, water supply energy, and the environment. Based on his report Kidane (2016) indicated that in the previous 25 years school enrolment in the country has shown a great improvement which is from 213,368 individuals in 1991 to 679,038 individuals in 2014 this tells that the enrolment was grown by 218%. While the university and college enrolment increased from 1200 regular students to 14,000 students by 2015 the progress is in the region of 1067%. In the case of the health sector, 25 hospitals of which five of them are referral hospitals are contracted while 52 health centres 180 health stations, 77 clinics, and 5 more facilities that provide specialized services related to mental and child care centres are also built in the 25 years of the independence era. In the case of transportation different road structures were built in 1991 only 4,930 kilometres while in 2015 it grows to 14,500 kilometres and increased by 195%. Buses that provide public transportation services to rural area grow from 267 in 1991 to 1769 by 2015 this indicate that the services were improved by 562%. In 1991 the energy power capacity was 30.1 megawatt but in 2015 it was 141.70 that

registering 371% growth. The report also indicates that there was a great improvement in modernization and the building of new infrastructures in the aviation and port sectors. All the developments in the different sectors are attained through the self-reliance model of the country and played an ultimate role in the improvement of the livelihood of the Eritrean people in a positive manner.

Table 6.1 Eritrea's achievements in developmental progress

Indicators		1991/95	2015
		1	Net Primary school enrolment
2	Population 15-24 year olds with some education	59%	94%
3	Under five mortality per 1000 live births	151	47
4	Infant mortality per 1000 live births	92	32
5	Proportion of children 12-23 months old with measles vaccination	51%	89%
6	Maternal Mortality ratio per 100,000 live births	1700	352
7	HIV prevalence per 1000		0.25
8	Malaria cases per 1000	(1998) 53.5	12
9	TB Prevalence per 100,000	484	74
10	Proportion of population without access to safe water	87%	33%
11	Electricity generation (Mega Watts)	30.1	141.70
12	Life expectancy at birth	46	63

Sources: Based on reports of sector ministries.

Table 6.1 showed that Eritrean progress is not only restricted to food and water security its developmental progress is also applicable to different sectors. Table 6.1 proved that Eritrea is showing a great improvement in several areas such as life expectancy, HIV cases, and youth Literacy (UNESCO, 2013, "Adult and Youth Literacy: National, Regional and Global Trends) based on the report Eritrea outperformed the majority of Sub Saharan African countries which achieved their independence a couple of decades before Eritrea (Kidane 2016). Eritrea is the only African country to achieve the three Health Development Goals in 2013 which is before the deadline target day of 2015. All the achievements attained in table 6.1 are attained through the self-reliance policy of the government but none of these achievements are mentioned or reported by the different humanitarian organizations' agents and their allies.

6.4 E.P.L.F.'s Self-Reliance Policy on the Fields of Economics and Agriculture

Eritrea's socioeconomic model is the result of its thirty years' war for independence from Ethiopia which shaped the thinking of President Isaias Afwerki and his advisors. Eritrea gained its independence through a victory against seemingly impossible odds, and it was achieved without any significant support from outsiders.

At its very beginning, the EPLF adopted the model of self-reliance policy and aimed to practice it seriously on all fronts and in various fields of the revolution for independence. EPLF believes that this policy played and will continue to have a central role in all economic strategies and planning activities of the organization. In addition to this, the EPLF strongly believed that "in an economically backward third world country like Eritrea, given the domination of world markets by the imperialist countries this policy is a necessary precondition for the establishment of an independent and developed economy" (EPLF, 1987). The EPLF also points out that the practicing of the self-reliance model is an essential tool for the collective independence and liberation of society, politically and it is the sole means of achieving freedom

In the field of Economics, similar to the view of Gaim Kibreab (2009) a self-reliance policy is accepted as the only means of prevailing international conditions that enable people to develop their economic potential depending on their material and human resources. Socially the EPLF viewed the self-reliance model as an important process of liberating and highlighting it as working cooperatively and collectively to satisfy your own needs. Unlike to the concept of self-reliance dependence was expressed as "dependence breeds subservience and lack of self-confidence. Freedom from dependence enhances a people's independence of thinking, innovativeness, perseverance and pride in work and struggle" (Gaim Kibreab 2009:171) "In pursuing a policy of self-reliance these attitudes promote and accelerate the development of every aspect of endeavour social, economic, political, etc. in the process of building a developed socialist society. This thinking lies behind the EPLF's strict emphasis on self-reliance" (EPLF, 1987). As this is the main belief of the Eritrean People's Liberation Front and as it is ruling the country Eritrea's main development strategy is the self-reliance model.

The aim of economic self-reliance during the critical stage of the struggle for independence involved two points. The first point was that the EPLF strives to improve the productive capacity of the Eritrean people. On the second aspect, the EPLF engaged in economic activities to provide for the material and financial needs of the struggle for independence, at the same time laying the foundation for the future economy of Eritrea (EPLF1987).

EPLF's willingness was to be as independent as possible from importing food products and agricultural inputs as the organization was considering making its own needs of production and consumption. EPLF also believes that self-reliant agriculture is the main economic foundation for the financial autonomy of the EPLF, at the same time it was also believed to be the main source that provides the raw materials needed for the manufacturing industry.

Self-reliance concerning the peasant economy proposes a reduction of and eventual freedom from dependence upon agricultural imports for production and consumption. It aims at eliminating the material dependence of the population on external aid and cases of food shortages, famine, and other problems, and at resettling thousands of Eritrean peasants who as refugees are passing through a life of misery in neighboring countries. Immediately, it means resettling thousands of Eritreans who have been displaced from certain war zones. This calls for the creation of a spirit of self-help through cooperation, growing scientific awareness, and creativity. It requires the conscious participation of the peasantry in the process of socio-economic change.

The implementation of these aims can be achieved only through, the elimination of feudal relations of production, the regrouping of agricultural land and development of cooperative production, the propagation of agricultural know-how, and the elimination of cultural backwardness which hampers production and development. Afforestation, soil conservation, and the prevention of animal health services are also concomitant technical necessities.

6.5 Self-reliance as a Doctrine in the War for Independence

Welde-Giorgis (2020) stated that Ralph Waldo Emerson an American Philosopher of the 19th century introduced self-reliance as a strategy that guides a moral principle of life. Religious wise the concept of self-reliance indicates a moral character for individuals to control their affairs independently without the intervention of external powers. As a political philosophy, the concept of Self-reliance highlights the "moral worth of the individual and the value of self-dependence and independence in pursuing one's objectives, desires, and interests free of any external interference" (Welde-Giorgis 2020:202). Based on the philosophy of self-reliance the human individual concept is placed as the central point by depending on own capabilities, resources, and judgments and applying it as the main ideology to attain the desired objectives intended to be addressed independently and this is practically seen as the main policy on the Eritrean struggle for independence.

The beginning of the Eritrean armed struggle in 1961 witnessed the implementation of self-reliance in the hunting for independence and the route followed to achieving this was the

rallying of the Eritreans from all parts of the country to join the military forces and this come to practical by bringing together the material resources and the human resources in an organized manner against the Ethiopian invasion. Despite the military and financially support Ethiopians gained from the great superpower countries like the United States of America and the Union of Soviet Socialist Republics (USSR) the armed struggle of Eritrea which is fighting on the battlefield for self-determination gained nothing as assistance from any external powers. Due to the underwhelmed external assistance, the Eritrean people's Liberation Front decided to follow the principle of self-reliance doctrine which is relying on materials that are accessible to the organization easily and these are the native people of Eritrea and its resources. Without the participation and mobilization of both human and material resources, the movement for the liberation of the country will not be successful. The main source of the Eritrean military artilleries was the Ethiopian army and the EPLF has a slogan said *"get rid of the enemy's army with its own artillery"* this is the only option that secured the existence of the movement for independence as different countries supplied regular army equipment to the Ethiopian army mainly countries like the USA followed by the USSR and then from Israel while the EPLF's army got the guns and other valuable armures and animation by capturing them from the Ethiopian army on different battlefields.

As it was explained earlier the policy of self-reliance in the struggle for independence asked for the mobilization of the people and resources at the maximum level. This comes practical with the participation of Eritrean nationals who reside both inside the country and outside of the country. That is why we said that the sustainability of the EPLF's existence was achieved by the contribution of those who live inside the country and play their role by being part of the struggle in person and materially, and those who reside outside the country contributed to the struggle both morally and financially. The EPLF believes the Eritrean people and their resources as the main assets of the country. The building of collaborations with different organizations with the objective of mutual benefits is on the cards of the EPLF and different organizations showed their solidarity and supported the movement materially. The solidarity of different organizations which is the outcome of the collaborative strategy with the external body added value to the self-reliance policy.

The role of African Development Bank on enhancing the availability of water which can be used for agricultural activities of crop harvesting and livestock farming can be a good example. "For instance the Bank-supported initiatives have helped increase water availability for crops and livestock in the country by **220%** over six years. This follows the completion of sixty masonry dams built through a community-based approach. The Bank has also rehabilitated 4,780 hectares of land upstream of the dams and 4,600 hectares downstream" (AfDB News 2023). This indicates that having a strong collaborating policy with an external

force without compromising your main interest by focusing on a shared understanding for the benefit of both parties will be effective in the success of the self-reliance policy doctrine of a country.

6.6 The Water Security Program in Eritrea

The most common challenges in the Horn of Africa are poverty, climate change, a fast-growing population, and food security, which are directly related to the availability of water resources. Nowadays Eritrea can be a point of reference for the art of harvesting and managing water resources on achieving sustainable food security in the region where it is difficult for farmers to cope with drought and crop failures.

Water is a very valuable and scarce commodity in the whole of the horn of Africa. That is why, with the support of development partners, the Eritrean government, farmers, and herders are expanding spate irrigation. By harnessing floodwaters and collecting run-offs, building dams and reservoirs farmers can provide sufficient water for the crop season (Fisshatzion, 2017).

Based on the Eritrean Profile's report of 2018 the director-general of water resources in the ministry of soil water and environment indicated that Eritrea's water management policy is to develop and conserve the country's water resource and make sure that it is managed efficiently and used wisely. Depending on underground water is not sustainable; as a result, more than 300 dams have been constructed in the last 30 years, and around 20% of the total amount of water in use is generated from dams, and the underground water in use covers the remaining 80% (Eritrean Profile 2018). Since independence around 1517 water projects were implemented based on that Due to the huge investment conducted by the Eritrean government access to safe and clean water has increased massively throughout the country. It was reported that the rural population of Eritrea who are enjoying clean and safe water has increased from 7% in 1991 to 70% in 2021 while the urban population who enjoyed access to safe and clean water increased from 30% in 1991 to 92% in 2021 (Ministry of Finance and National Development 2021).

As global warming keeps frightening our planet, Eritreans have been working very hard on tackling desertification, erosion, and water scarcity. In Eritrea "every drop of water must be saved and stored at all costs" (Temesghen 2020) this motto is also a common memo with other projects related to water and food security, the provision of social services, and industrialization. To address the problem, since the dawn of independence, the Eritrean

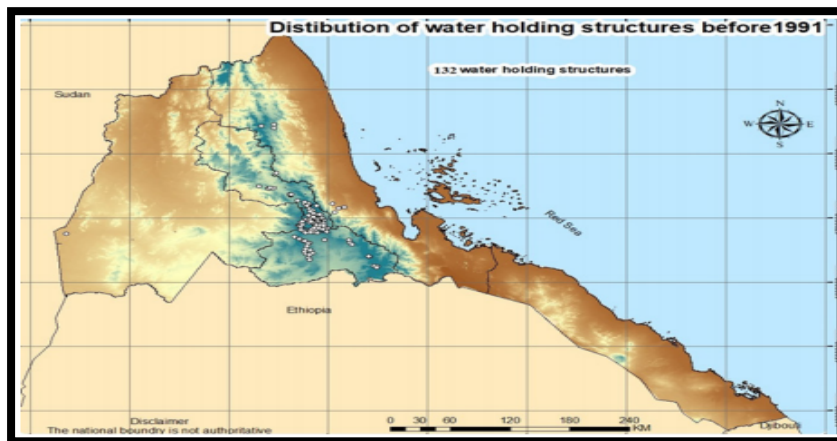
government has been working to ensure and supply sustainable and clean potable water (Billion Temesgen 2020).

It is quite interesting to view man-made lakes in areas that were known for being the arid and dramatic transformation of the desert to green land. Due to this effect, the lifestyle of the people who live in the region was changed completely. The development activities have triggered a chain of transformations in infrastructure, which are obvious in the Gash-Barka region. The western lowland or the Gash-Barka region is characterized by a hot climate and most of the region was not encouraged for conducting agricultural activities due to a shortage of water. However this natural obstacle no more exists due to the measures taken by the government on the construction of dams, and the soil and water preservation activities that include afforestation and construction of water catchments. The construction of dams is in the lead position in bringing about the comprehensive accomplishment that is being recorded so far. The construction of rock-fill and concrete earth and masonry dams has been a catalyst for the transformation of arid areas into agricultural centres. This development gives a way for the planting of agro-industry sectors, such as Bantam (banana and tomato processing factory), precast factories, general metals, vehicles, farm machinery maintenance workshops, and cold stores in the region.

As Eritrea's rivers are seasonal, the absence of water reservoirs in the past was one of the prime reasons that caused the wastage of plentiful water and fertile soil during the rainy season. with almost no river that runs the whole year-round with records of the annual rainfall of around 380mm, the Eritrean government prioritizes itself on the construction of hundreds of various dams of different types and sizes in the region that was once recognized as arid to boost its water and food security at the same time to fight the harm of climate change (Gebrihwet 2020). That is why in the past two decades the government established substantial funds to build a network of dams throughout the country to harvest water and guarantee incremental transition from traditional farming systems to irrigation farming in pursuit of a program of food security. To attain the desired food and water security the government so far built 9 strategic, 3 fairly big 1 underground, and 747 micro dams besides 7 diversion schemes (Gebrihiwet 2020).

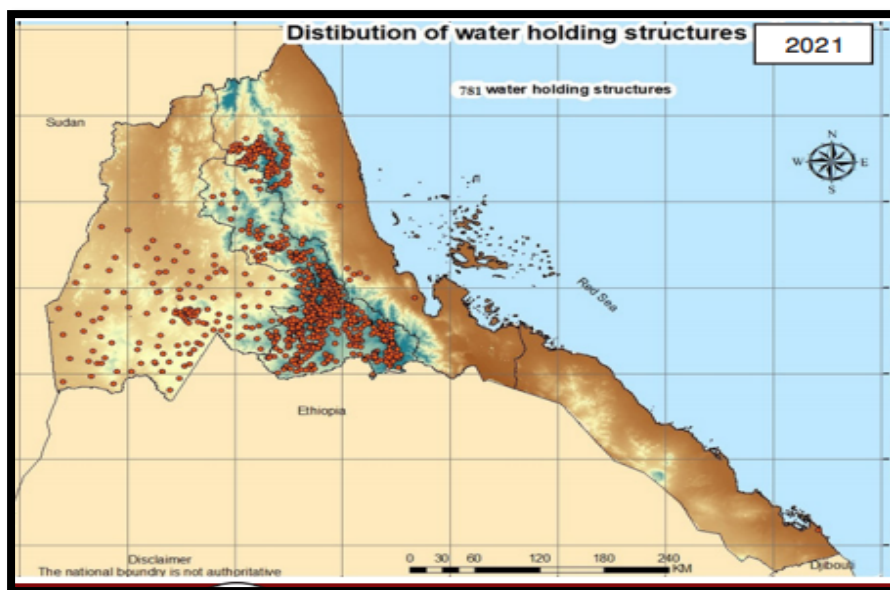
Figure 6.1 below indicates the distribution of water holding structures before the total independence of Eritrea was only 132 dams and the figure also indicates that the water projects are not evenly distributed all over the country most of them are constructed in the highland region while the western and eastern lowland region which are the driest, the largest and the most fertile land parts of the country are ignored.

Figure 6.1 Distribution of water holding structure before independence (1991)



Source Ministry of Agricultur Newsletter (2021)

Figure 6.2 Distribution of water holding structure 2021,



Source, Ministry of Agriculture Newsletter (2021)

Unlike figure 6.1, figure 6.2 showed that the water-holding structure has shown a rapid increase and the figure increased from 132 to a total number of 781. Before the construction of the projects, several studies are carried out by the government primarily there is a collaboration within the local communities and identifying their needs, considering hydrological and physical suitability, identifying the area with acute water scarcity, recognizing the community's readiness on treating catchment area and discover the

potential availability of suitable area for irrigation. That is why the distribution of the water-holding structure in figure two is showing a significant development in terms of geographical distribution (Ministry of Agriculture Newsletter 2021).

6.7 Socio-economic Contribution of the Sustainable Water Sufficiency

Gebrehiwet (2020) indicates that research was conducted between, 1992 to 1997 at different sites of the country mainly on the western lowland in particular in the Mereb-Gash River basin to explore water resources for the expansion of agriculture and provide potable water in rural areas, indicating the long-term vision of the Eritrean government. The construction of dams in different locations of the Gash-Barka region has a push factor in triggering farm activities over thousands of hectares of land to grow different kinds of cereals and cash crops and raise animals. Besides that, it has also provided employment opportunities for new graduates and played a vital role in the human resource development program. The farm fields under the dams have been perfect workshops for graduates from colleges and vocational training centers to sharpen up their skills and build up their skills through hands-on experience.

The construction of dams is not the sole activity that needs to be highlighted here at the same time roads were also constructed to help with the transport of construction and irrigation resources to the dam sites, and once the dams are built, those roads are the main chains that connected the farm area with market centers. Power stations have also been planted in the sites where dams are constructed and farm activities are thriving. These developments motivated the movement of people and the low-populated region was changed into a highly-populated area.

Overall the “can do” spirit of the government and the people has transformed arid areas into evergreen wetlands. The construction of dams and farm activities are stepping stones for a chain of other developments that led to the urbanization of some villages in the western lowlands. The dams have also created a mesmerizing beauty in the natural scenery. The dams are generating a vibrant ecosystem and paving the road for a prosperous future in the country’s agro-industry (Gebrihiwet 2020).

6.8 The Eritrean Self-reliance Model and the Collaborative of Governance Model on Food and Water Security

The Eritrean history of struggle for the liberation of the country is a history of self-reliance. This is clearly, mentioned in the PFDJ National Charter by saying that “we succeeded

because we planned according to our own experience and conditions, without copying anybody else's political models, foreign policies or military strategies" (alenalki.com 2011:12). At the same time during any difficulties, the problems were resolved patiently internally without any external interference. This doctrine is the fundamental base that pushed for the independence of the nation and it is also the doctrine that played a crucial role in the construction of different developmental projects. This is further witnessed by AfDP president on his work visit to Eritrea and assured that "I came away from this visit very enthused that the country is innovating and not just copying others," (AfDB News 2023).

In most Sub-Saharan African countries strategic dams, highways, roads, airports, and other infrastructural structures are constructed with the assistance of foreign resources or external forces. This support can be achieved by recruiting a foreign company that does all the activities that starts from the planning of the project to the process of implementing the project and then making the final decision on finalizing the project on need. Some governments also hire foreign expertise or advisors who do all the paperwork and administrative and supervising activities from the very beginning to the end. Some countries also conduct the project by receiving financial support from outsiders which could be either in the form of loans or aid.

Dr Akinwumi Adesina quoted that "Nobody is going to do development for you. You have to do it with pride and have the self-belief that you can do it," (AfDB News 2023). Adesina also said, unlike other African countries in Eritrea different developmental projects are constructed by the internal capabilities of Eritreans. In the construction of different infrastructures for developmental projects, the government imported very limited types of resources such as oil products, different types of machinery, and steel bars from international markets (ER TV 2021). Other building materials such as cement, sand, gravel, and stone are national resources. In addition to this, the human resources such as the expertise, engineers, designers, inspectors, constructors, carpentries, different machine operators, supervisors, and others are of Eritrean nationalities. Eritrean domestic companies are given the responsibility for the construction of the different developmental projects. Geographically Eritrea is located in an arid region of the sub-Saharan Sahel region which is characterized by low rainfall climatic conditions. The rain distributing structure of the country is unevenly distributed and it is for a short period. There is also the fluctuation of rain some region receives more and another region of the country receives a low amount of rain. As water is one of the main necessities of life and knowing that Eritrea is located in a zone that is struggling with dryness and shortage of water the government priorities the water and soil conservation developmental projects as the primary targets and constructed a large number of small, medium and large dams by depending on domestic resources. Food security

played a vital role in maintaining stability and the quality of life of the people of a country. Without maintaining sustainable water security maintaining sustainable food security is very difficult. Having this in mind both the Eritrean government and the people are working hard collectively to achieve their targets and the government pointed out that “*Every drop of water must be saved and stored at all costs*” (Temesghen, 2020). Then by following this motto government constructed a total number of 785 big small and large dams. Out of the total 785, dams that are constructed by the collaboration of different national institutions 557 dams have the potential of holding from 10 to 100 thousand cubic meters of water, and 198 dams of the total number have the potential of holding from 100 thousand to one million cubic meters of water and 30 dams that could hold from one million to 330 million cubic meters of water some of these dams are considered as strategic developmental dams.

Table 6.2 below indicates the number of small, medium, and big dams which are constructed after the independence of the country. These dams are constructed in different parts of the country. All the zobas which means the zones of the country have their shares however the Southern Red Sea zoba is the only zone that is not included in the projects. Southern Region is the one that benefited the most with 338 dams out of the 785 dams. This is due to the availability of different seasonal rivers that crosses the region in addition to the high population density and the availability of agricultural land for cultivation. With the most dams constructed if we look at the Anseba Region, Gash Barka Region, and Central Region the number of dams constructed in the regions is 164,145 and 115 respectively. In terms of the Northern Red Sea region, the numbers of dams constructed in the region are 23. Similar to the Southern Red Region the Northern region is inhabited by less population than the other regions and the rivers crossing the region are fewer than the other regions.

Table 6.2: the number of small, medium, and big dams constructed in different regions of Eritrea

Name of the Region	Number of Dams Constructed
Southern Region (Zoba Debub)	338
Anseba Region (Zoba Anseba)	164
Gash-Barka Region (zoba Gash-Barka)	145
Central Region (Zoba Makel)	115
Southern Red Sea Region (Zoba Semenawi Keyih Bahri)	23
Total number of dams Constructed	785

Source ministry of information (2021)

All these dams which are constructed after the independence of the country are built by the collaborative process of the self-reliance model which is operated through the interaction

and engagement of different institutions of the country by utilizing domestic internal resources the country owns. Out of the total number of dams constructed 557 dams have the potential of holding 10,000 to 100 thousand cubic meters of water and 198 dams have the capacity of holding from 100, thousand to one million cubic meters of water. Thirty dams out of the total dams constructed after independence have the capacity of holding water from one million to 330 million cubic meters of water.

6.9 The Strategic Dams Which Are Constructed By Collective of Governance of Self-reliance Model

In the majority of developing countries, the construction of strategic mega-dams is very challenging without the assistance of foreign power, and most of the time these kinds of dams are constructed with funds which are obtained from the World Bank, IMF, Or other humanitarian and developmental organizations in the form of aid or loan. That is why the president of the African Development Bank expressed his impression on the inoveiteve engineering capabilityof Eritrea and put his remarks by saying that “In many countries, these dams would probably have been contracted out to foreign contractors or big engineering firms. The Eritrean people built the dams themselves. I was surprised that a lot of them were done by students” (AfDB News2023). As a nation Eritrea is a country which is sanctioned and exempted from obtaining any support from the World Bank or IMF in the form of fund or loan the country constructed more than 785 small medium and big dams. Out of the total constructed dams eight dams are known as strategic dams which are built in the last 17 to 18 years for multipurpose use. However, Kibreab (2006:186) tried to prove that the Eritrean government is working against the fundamental strategy of self-reliance policy by demonstrating that “it is not possible for a country to become self-sufficient in food and other necessities when a substantial proportion of the agricultural, industrial and service sector labour force is mobilised into the army and scarce resources whit high opportunity casts are squandered in the purchase of weapons.

Opposite to that the construction of these dams is accomplished by domestic Eritrean construction companies which used local resources of raw materials and manpower. These strategic dams which are constructed after the independence of the country are listed in table 5.3. These strategic dams are constructed in the last 18 years of the no war no peace era. After the independence of the country, the government intended to build such strategic dams depending on the internal capacity of the country without any interference from any outsiders from the beginning of the projects till the end. The water carrying capacity of the

dams starts from 14 million meters cubic of water which is Fancooo Tsimu Dam to 330 million meters cubic of water at Kerkebet Dam.

Table 6.3 Strategic dams constructed after the independence of Eritrea

Name of dam	The volume of water in millions of cubic meters of water
Kerkebet	330
Gahtelai	50
Misilam	35
Logo	32
Gerset	35
Fanco-Rawi	20
Fanco-Tsimu	14
Bademit	17

Source Ministry of Information (2021)

The strategic dams are constructed for multipurpose reasons and they are constructed in different parts of the country. Kerkebet, Fanco Rawi, Fanco Tsimu, Bademit, and Gerset are constructed in Zoba Gash Barka region which is part of the western lowland of the country. While Meselam and Logo are twin dams constructed in the Southern region (Zoba Debub) which is part of the highland of the country and Gahtelay Dam is constructed in the Northern Red Sea region known as the eastern lowland area. Similarly to the strategic dams the other groups of dams which are the medium, the large, or small dams their contribution to the change in the life of the local communities of each region is immense however the strategic dams are the dams that demand high investment be it financially, materially or human resources so the finding is going to give more emphasis on the strategic dams which are constructed based on the free choice policy of self-reliance model of the Eritrean government. And the process of collaboration of the different institutions will be discussed in detail and this will be investigated by selecting the Logo and Missilam Dams as the main centres of the study. Similarly to the reason why the government chose the dams to be constructed on the site where they are located as a researcher, I select the Logo and Misilam dams I have a strong belief that they can represent the other strategic dams because the dams are constructed by following the procedures of self-reliance model with the collaboration of different institutions. Other issues that are considered in selecting the sites as the centre of study are the high population densities of the region and the geographical location of the sites where they are constructed in a central area that is easily

accessible will give me great flexibility in finding the desired information. The people who are living around the dams have a long history of being actively engaged in agricultural activities in their day-to-day activities. Both Misilam and Logo dams also have the advantage of proximity where both the dams are built closer to the major big cities of the country including the capital city Asmara.

Providing the opportunity to the local construction companies to transform the impossible into the possible is considered a challenge and an opportunity and this was witnessed during the first experience of Segen Construction Company when the opportunity was provided by the government for the construction of the first strategic dam in the country by the company. To mention some of the main challenges was the weather conditions of the country as Eritrea is a country characterized by dry arid and semiarid weather conditions construction of strategic dams in an area far from the central base of the company with the limited logistics the company have is very challenging. On the other side, the company accepted it as a great opportunity because it considers the challenges and experiences for the future. This is a stage where the company identified it as a turning point that transform the company from a company that builds small-scale projects related to road construction, bridge construction, the building of new micro and macro dams, and repairing old dams. When the company was given the responsibility to build strategic dams it accept it as a great opportunity where the company can gain a new experience that can help for future developmental activities.

- 1 Fanco-Tsimu Dam:** this is the first strategic dam to be constructed by a local construction company depending on Eritrean resources with water carrying capacity of 14 million cubic liters of water. The responsibility to build this historical dam is given to Segen Construction Company which is an Eritrean construction company. The construction of the dam was started in 2003 and finished by the end of 2005 at the beginning of 2006. This dam is located 30 km southeast of the city of Tessenay (ERi-TV 2020). The main reason that leads to the construction of the dam in that region is the availability of the raw materials used for the construction of the dam and the potentiality of the dam owns on to transform the arid dry area around the site into a green agricultural hub that can change the lifestyle of the people who live around the area. The construction of this dam gives the company great confidence and it was mentioned as a turning point that let the company assess its achievement and be ready for further challenges.
- 2 Gearset Dam:** This dam is built in the western lowland which is located a few kilometers away from Fanco Tsimu towards South West. Based on the experience gained from the construction of Fanco-Tsimu the construction of Gerset Dam is with fewer challenges. The dam has the potential of holding 32 million cubics of water with

a potential of cultivation of 10,000 hectares of land. The government spent more than 590.5 million Nakfa (Eritrean currency) which is around 37 million US dollars and this dam is constructed by Segen Construction Company which is one of the biggest domestic construction companies in Eritrea. The dam was constructed by the collaboration of different institutions under the guidance and management of Segen Construction personnel. The main source of water for the dam was the Andelibe stream which was diverted from its original route towards the dam. The people around the dam used to practice traditional subsistence farming and nomadic animal rearing economic activities. However with the construction of the Gerset dam around 10,000 hectares of land were cultivated with different fruits such as mango, lemon, palm trees, and others. In addition to this, the project also introduced a modern technique of grazing animals such as cattle, camels, sheep, and goats. The project also provides job opportunities to more than 3000 local communities that have been repatriated from the neighboring country Sudan. Gerset dam played a vital role in changing the appearance of the landscape and transformed the arid region into green land. The tomato products which are harvested from the agricultural fields in this region are the main source used for the production of tomato paste at the Alebu Pantone Tomato and Banana Agro-Industrial factory.

- 3 Fanco-Rawi Dam:** Similarly to the other dams this dam is constructed with Eritrean resources and different institutions are involved in the making of the dam. Segen-Construction Company is taking responsibility for the design and taking administrative responsibilities. The Gash Barka Administration zone and local communities of different sub-zones of Haycota, Goluge, Tessenay, Omhajer, and members of the military army are collaborating productively on the building of the dam. The construction of this dam started in 2008 and finished in 2011 and it costs around 255.4 million Nakfa which is around 17.02 million American dollars at the current exchange rate. The dam has a capacity of holding 20 million cubic meters of water and has around 6000 hectares of land which is ready for the cultivation of different vegetables such as chilly, tomatoes, onions, crops, and other fruit plantations (Tesfa News 2020). This dam provides a great opportunity for the local communities to be part of the project and be employed in different sections of the agricultural field with different positions. Similar to the other strategic dams the dam played a crucial role in changing the dry region into a green region and providing the nomadic people shift to daily wage earners and access to clean water for themselves and their animals.
- 4 Bademit Dam:** This is the dam which is constructed in the Gash Barka region closer to the town of Omhajer its water holding capacity is 17 million cubic meters of water

with a potential of expanding it to 32 million cubic meters of water in the future by diverting river Malobia to it. There are around 3000 hectares of land which are ready for cultivation in addition to the 20,000 hectares which are already under cultivation by the locals. This region is exceptional compared to the other areas of the western lowland where the strategic dams are constructed because it is located in the region that received one of the highest annual rainfalls which extend from 600mm to 800mm annually. Cash crops like sesame, sorghum, and other crops are mainly grown by the locals (ERi-TV 2021). This dam was known for the contribution it provides to the nomads as a source of water for them and their animals. Before the construction of this dam, the nomads used to travel to the Tekeze River which is located on the border between Eritrea and Ethiopia. Traveling long distances with their animals is a big waste of time and energy so the building of Bademit Dam is a great relief for the local communities. On the other hand, the construction of the strategic dams leads to the shifting of the old nomadic culture of the society to permanent settlers and this hurts the local communities because their nomadic lifestyle is going to be marginalized by a new culture of urbanized style. The new mode of modern lifestyle is going to be very challenging to adopt and the government is going to pay a heavy price for the preparation of different infrastructural structures that supports the new settlers. This is clearly stated in the literature that evaluation of the process of monopolization within the current agri-food system has a great impact on the global peasantry through depeasantization and proletarianization which leads to the prohibition of the peasants from practicing their traditional activities and the making of the working class society in the rural communities (Bryceson, Kay and Mooji 2000; McMichael 2012, 2013). The different contradictions surrounding the modern food system lead to the emergence of a new food sovereignty counter-movement

- 5 **Kerkebet Dam:** This is the largest dam in the country known as a man-made lake, which costs one billion Nakfa which is around 67 million American dollars. The dam is constructed through the integral teamwork of different institutions of the local construction companies in the country, local communities, members of the Eritrean Defence Force (EDF), and staff of regional and sub-regional administrations. The dam's storage capacity is 330 million cubic meters of water and has the potential to irrigate 30,000 hectares of farmland that is ready for cultivation which has the potential of transforming the country's agriculture from a traditional system to a modern system. The land around the dam is virgin and fertile land which is very conducive to the cultivation of different cereals, oilseeds, sugar cane cotton, groundnut wheat, and other commercial crops. Gebrehiwet (2021) expressed the region

around the site as one of the regions with the greatest potential to be the source of foreign currency and a key player in the economic development of the nation. This dam is believed to play a vital role in changing the quality of life of the local communities and transforming the way of their living from nomads who don't have any permanent residence to constant settlers and sustainability is shown to progress as people from the highland who own more experience on agricultural activity are moving to the area. Besides this, the government is motivating investors to invest in agricultural activity by providing the infrastructural structures they need.

6 Gahtelay Dam: Gahtelay dam is located in the eastern lowland area known as the Eastern Escarpment region. This dam is constructed by local engineers and financed by the internal resources of the country. The dam aims to make another food basket in the eastern part of the country. The plain land around the dam was desert however, with the construction of the dam the region become suitable for agricultural activity. The town of Gahtelay is home to 3000 people who are known as pastoralists and traditional farming mode of life. Gahtelay dam has a capacity of carrying around 50 million cubics of water with the potential to irrigate around 50 thousand hectares of land in the vicinity of the dam. The dam is also constructed as a source of potable water for the city of Massawa which is the largest port in the country. As the contribution of the dam is tremendous and the dam is the first one to be built with concrete.

7 Logo and Misilam dams: Both Logo and Misilam dams are twin dams built in the central highland region of the country. Similar to the other dams these dams are also constructed by the internal capacity of the government both financially and human resources with the integration of different institutions under the supervision of the cartography sector which is under the guidance of the president's office. The water holding capacity of Mislam and logo dams is 35 and 32 million cubic meters of water respectively. The reason that leads to the making of the critical decisions to build these dams on these sites is due to different reasons. Firstly the dams are located in the central highland of the country and this region is familiar with the population density it contains which makes the region very suitable for the building of agro-industry projects. Second, the proximity of the region to different cities of the country including the capital city Asmara makes the region easy to get access to other parts of the country. As the capital city is not far from the site there is a potential that these two dams will be the main source of drinking water for the capital city and other cities including Debrwa, Mendefera, Dekemhare, and other towns and cities. The people which are living in the

vicinity of these dams are well known for their hard-working nature. They also have the culture and experience of practicing agricultural activities from a long time ago and this is very advantageous for the selection of the region. Locating the main source of the Mereb River which is one of the longest rivers in the country is also another reason that motivates the building of dams in the region. Because of the collective advantages, the region has Logo and Mislam dams selected to function as the centre of comprehensive development projects (Temesghen 2020).

Engineer Berhane in his interview with Eritrean Television (2021) indicated that the aim of the construction of these dams in the region is for multipurpose use. They are going to serve for domestic use, industrial purpose, and agricultural purpose. The expectation of the dams for the nation-building of economic development is high serving as a drinking water resource for different cities and villages of the Zoba Debub is one purpose with a great potential to extend it to the Central Region mainly the capital city. The Halhale and Azieb Agro industries are also identified as one of the most beneficial of these strategic dams.

The logo and Misilam dams demand high engineering expertise and funds for their makings. The construction of such dams with your own capability without any external assistance is a great pride. The landform around Misilam and logo dams mainly in the vicinity of Adihalo is granite rock which is characterized by fractured rock. Grouting technology is applied to fix the fractures of the rocks and minimize any risk that may occur. The granite rocks are very strong and convenient to serve as a basement for the dams. The laterite rock soils and the basalt rocks and clay soils are used on the saddle dams

Similar to the other strategic dams the security of the dams is assured by a detailed study in advance of their construction the process of how the dams are constructed and after the finishing of the construction. The region where these two twin dams are located is characterized by a large number of waterfalls so in a long term there is a fear that the dams may be filled with different deposits. According to the study conducted by the ministry of agriculture, there is a soil erosion of nine tones of soil for every hectare of land. Collectively over the whole catchment area in the region near Logo and Missilam dams, the possibility of erosion of soil is around 400,000 tonnes of soil every year and this brings both inside and offside effects to the area that affects the soil fertility and reduces the productivity of the region.

The construction of these dams creates job opportunities for the local communities. According to the report on ERi TV (2021) around 90% of the total local population around the developmental projects were employed on different parts of the projects and they improved their standard of living by being paid cash and grains. Engineer Berhane Beyene the project

manager of the site said that the villages which are positioned above the elevation of the dam generate water with the support of a solar pumping structure while the villages which are located under the dam got the water they need through a liking system. These dams stored the desired amount of water on time and the region which is located beneath the dams becomes very rich with underground water. This underground water motivated the local farmers to practice different agricultural activities and started three times a year instead of the one-time rain-fed of harvest. The growth of different edible plants which are mainly fruits in the region is not common before the construction of the dams. The project manager of the dams points out the principles of the project by saying that “the priority will be given to the local communities around the developmental projects and will be the primary beneficiaries of the products” (ER TV 2021).

6.10 The Process of Self-reliance Model of Eritrea on the Making of the Strategic Dams (The Process of Collaborative of Governance)

This is the section that deals with the link between the Eritrean self-reliance model and Ansell and Gash’s (2008) Collaborative governance model. The self-reliance model is going to be explored and represented based on the variables used in the collaborative model of governance. The collaborative model is a model represented by four broad variables which are then indicated as *starting conditions, institutional design, leadership, and collaborative process*. These variables are going to be represented in the Eritrean self-reliance model as they represent the collaborative governance model. Each variable is further divided or split into smaller variables and the collaborative process is considered the central point that connects the two models. In terms of the self-reliance model of Eritrea, it is the outcome of the existing collaborative process of the different institutions in the country for a certain target to be achieved. And the collaborative process is the outcome of the collective effort of different variables and these variables are represented by the starting conditions variables, institutional design, and leadership variables.

It is obvious that there is a starting point for every ending and the same is true for the collaborative governance and self-reliance model this can be investigated by looking at the foundation of different aspects such as the power imbalance level between the stakeholders in the process. Secondly, the incentives gained to be directly part of the process or participant in the collaborative process of applying the self-reliance model is also a very essential aspect to be considered. Thirdly the prehistory of the cooperation or conflict in the process of collaboration is the base for the continuation of the collaborative process so exploring the prehistory of the self-reliance model in the making of developmental projects is

significant as well. In both the collaborative governance model and the Self-reliance model of Eritrea the starting conditions variable is indicated as the process of trust, conflict, and social capital that develop into resources during the process of collaboration. Alike to the collaborative governance model the Eritrean self-reliance model also lay down the foundations of the fundamental rules where the collaborative process is applied. The leadership process is considered one of the prime aspects that played a vital role in facilitating and mediation in the collaborative method in both the collaboration of governance model and the self-reliance model.

6.10.1 The Starting Conditions

The building of developmental projects to make the impossible mission possible by depending on a domestic company when the nation is under economic sanctions is very challenging on one side, and a big opportunity on the other side. Before preceding the building of the strategic dams, conducting several pilot studies are very supportive of having a clear image of the developmental project. As these activities are carried out by different experts from different institutions the process of collaboration between the different institutions started from the starting conditions. The first step of the pilot study is associated with identifying the amount of annual rainfall the region receives another aspect to be considered and studied is the landform of the selected area where the dam can be constructed this is related to the land's water permeability structure, the soil textures either the type of the soil is sand, silt or clay. Another issue they considered at the very beginning of the construction of the dam was the capacity of water carried by the streams passed through the region identified for the construction of the dam and what is the desired amount of water assigned to be diverted to the dam. Overall having a clear image regarding the importance or advantage of the dams and the contribution they will provide to the local communities and the nation following their construction is very crucial. Depending on the purpose of the dam under construction knowing or identifying the potential of the total area which can be used for modern agricultural activity is very important. In doing these pilot studies the participation of different institutions in a collaborative way is very crucial because these activities cannot be finalized in one go they need the expertise from different institutions to conduct their pilot study and then combine all together to come to a final decision or conclusion.

6.10.1.1 Prehistory

The majority of the people around the developmental projects used to lead their life depending on subsistence farming depending on seasonal rainfall, and they used to harvest

once a year. The villages which are beneficiaries of the developmental projects of the Logo dam are Adi-Halo, Adi-Saldayt, Adi-Zawel, Adi- Kelkelti, Adi-Xenay, Adi-Sherefet, and Adi-Hayot (geeskaafrika.com 2020).

According to the documentary report conducted by Eritrean national television of 2021, by interviewing the residents of the villages which are closer to the developmental projects shared their views on the making of the projects by saying that " before the construction of the dams there was a misunderstanding between the local communities and the other stakeholders (ER TV 2021). At the very beginning, the government informed the local communities of the seven villagers about the developmental projects and their aim. At the same time, the government informed them to be part of the project by being active participants and playing their role in the success of the project" (ER TV 2021).

Prehistory of antagonism or cooperation between the stakeholders has the probability of either hindering or facilitating the collaboration process (Andernavich 1995, Gray 1989, Cf, Margerum 2002). This is clearly expressed in the conflict or misunderstanding that takes place between the leadership of the government and the local community of the seven villages when the local communities were informed about the plan for the construction of the dams and the developmental projects. According to the Eritrean culture, the value of land to villagers is immense because it is the main source of their economy, livelihood, prestige, and the question of identity on the other side the Eritrean government's Land proclamation of 1994 stated that all land and urban housing belongs to the state. This proclamation gives the government the right to authorities regulate land ownership, Land tenure, and land use and management. Based on the land use policy introduced by the government the local communities tried to associate it with the history of the colonial era land use policy mainly the Italian land laws policy of 1909 and 1923 that declared the land as state property *terra domeniale* In this case all the fertile lands were used by Italians as the main plantation centres were taken from the ownership of the different villages. Similarly, under Ethiopian rule, there was new land reform in 1975 and all lands and urban houses were nationalized under the new proclamation. Having this history of land ownership policy of antagonism in mind there was hesitation among the local communities and they were unconvinced by the project saying that the government is trying to take advantage of the villages and grab the land. However, this started to fade over a course of time both parties started to settle their difference through a good-natured discussion. As trust-building between the authority and the local community is important for the success of the projects they come to a common understanding of collaboration that leads to trust-building and to come under a shared understanding of the feeling of ownership of the projects.

6.10.1.2 Incentive to participate

The incentives to participate are often shaped by the “shadow of the state” in terms of Eritrea all the developmental projects are designed planned and owned by the state. In addition to this, the policy of the self-reliance model is also the outcome of the state’s leadership which is acquired from the experience gained during the 30 years of war for independence. One of the main aspects that motivate the different institutions to be part of the projects and be active participants in the process is the feeling of ownership and belongingness of the projects by the participants which is seen and witnessed on the ground that the projects are Eritrean projects planned, designed, funded, and implemented by Eritreans for the benefit of Eritreans. The Ministry of Defence force is the main supplier of human resources and is actively working on different departments of developmental projects. Different parties opposed this doctrine for example Kibreab (2006:186) tried to prove that the Eritrean government is working against the fundamental strategy of self-reliance policy by demonstrating that “it is not possible for a country to become self-sufficient in food and other necessities when a substantial proportion of the agricultural, industrial and service sector labour force is mobilised into the army and scarce resources whith high opportunity casts are squandered in the purchase of weapons. Other humanitarian organizations indicated that the mobilization of the army on the developmental projects as slavery and Muller (2016) indicated that the, ‘no war, no peace’ is not a status recognised under international law and has been used too easily by the Eritrean government to justify the abusive practice that of national service.

While, Rena (2006:3) has different view and expressed the developmental campaign by saying that “members of the Eritrean Defense Force (EDF) in coordination with the people are making big contributions in all sectors of the economy. These dedicated individuals are building and developing their nation on all levels, from exertion of physical effort to intellectual sacrifice with just one clear mission: to develop Eritrea” (Rena 2006:3).

While members of the defence force expressed their motivational incentives for participating in the collaborative process by saying that “money or wage is not the incentive we are looking for, we are the product of the people so we are ready to pay whatever the nation asks for the best of our people” (ERi-TV 2020). Based on the Documentary titled “*Development around diga Logo & Misilam Dams - ERi-TV part 7*” broadcasted by the Eritrean national television at the end of 2020 members of the defence force who are actively participating in the construction of the dams expressed that their satisfaction depends on the happiness the projects bring to society by identifying several key points as their main incentives (Er TV 2020).

- To see the people having clean water to drink
- To see the people having electricity service
- To see the people with a smooth road for transportation
- To see the people practicing modern agriculture
- To see our people feeding three times a day
- To see our people with desired infrastructural strictures.

6.10.2. Facilitative Leadership

Salih Ahmedin a construction manager of the Logo Dam in his interview with Shabait.com (2021) indicated that to own hardworking human resources who are ready to provide whatever it asks is a great reward. Mr. Ahmedin tells that the secret behind the success of the construction of the dams is the outcome of the strong leadership structure of the government. The Eritrean leadership structure is built based on the strong relationship that existed between the people and the government. The relationship between the leadership and the public was built during the experience of the thirty years' war for independence where numerous difficulties and hardships were passed through. The leadership is very experienced in mobilizing the limited resource the country has and the ability on organizing and guiding the local communities and other stakeholders by converting them into resilient and committed to doing the job are the main secret behind achieving the targets. The role of the leadership in setting and sustaining clear ground rules is vital. Leadership's role in trust-building among the different stakeholders is also crucial. Leadership also played a great task in facilitating dialogue among the different actors and identifying mutual gains.

The leadership gives a great chance for the mass to be part of the projects and this has a long history from the time of struggle for independence and it was successful because the foundation of the struggle was the people. This creates a strong bond between the people and the movement that leads to achieving the objectives of the organization. The combination between leadership and the mass was so effective due to its organized structure. Right from its origin the EPLF's slogan was "*Politicize, Organize and Arm –the Mass*" and this philosophy is still used in the self-reliance strategy of the country (PFDJ Charter 1994:1998:10). Facilitative leadership plays an important role in bringing all the stakeholders under one umbrella and pushing them to a collaborative manner. The Eritrean leadership believes that discipline, resilience, self-belief, respectfulness, and resistance to any unfamiliar situations are the key pillars of the EPLF in the past and the Eritrean government at the moment. The collaboration of all the pillars is the reason behind the success of the leadership. Having a culture and a value of strong governance is very crucial in overcoming different problems approaching you on the road of developmental programs.

The leadership believes that having strong opposition from outside pushes you to be stronger the leadership also believes that using the geographical resources that you have wisely is very effective in the collaboration process of self-reliance policy and this is related to the philosophy of using the natural resources and human resources that you own in a good and effective manner and success will be attainable.

Believing in teamwork by depending on the resources or endowment that you have is one of the main attributes that lead to the success of leadership. Building a team for a certain objective is the outcome of internal integration and adaptation. Strong internal integration will lead to a strong external adaptation on the other hand having a weak internal integration structure will lead to a fragile adaptation process and this will hinder the developmental objectives from reaching a certain level of development. Bradford (1998), Lasker, and Weiss (2003) indicated that successful collaboration can be attained through the implementation of several leaders either directly or indirectly instead of depending on one leader. The Eritrean leadership structure for the construction of the developmental projects is a good example of this because different institutions have their own leadership and all the assigned responsible individuals will share their idea with the leaders of other institutions before they come to a common understanding and reach to a final decision.

This is the outcome of the past revolution movement for independence and much has been written about the achievements of the EPLF in relation to the administration of rebel-controlled areas. In particular the provision of services such as health, education, and vocational training under conditions of war and scarcity have been emphasised (see for example Davidson et al., 1980; Fekadu, 2002; Firebrace and Holland, 1985; Frankland and Noble, 1996; Gottesman, 1998; Iyob, 1997b; Papstein, 1991; Pateman, 1990) This is supported by the words taken by Engineer Birhane Kidane of the Eritrean Mapping and Information Centre (EMIC). Engineer Birhane Kidane explained that “the construction of the dams including of that of Logo were based on a solid foundation of professionalism, dedication, and enthusiasm of hundreds of Eritrean professionals and experts” Temesghen (2020).

6.10.3 Institutional Design

Institutional design is identified as the basic protocols and ground rules for collaboration which are known for their contribution to the technical legitimacy of the collaborative process. Having a clear knowledge of who should be involved in the collaborative process is one of the most fundamental design issues. Regarding the self-reliance strategy of the state of Eritrea that designed and built the different developmental projects across the country are

the work and the achievements of the institutional design made by the leadership of the state that brings the different institutions to a common understanding through the collaborative and engagement process. Different institutions make their contribution by being directly or indirectly involved in the making of the projects to achieve the objectives they intended to achieve.

The cartography sector is an institution that is operated under the president's office and comes into operation in 2006. The making of this institution is mainly to collect detailed information about what has to be done and how it has to be done. The cartography sector also identifies the location and future of the targeted area. Assessing and evaluating the geographical aspects of the land where the projects are going to be held in a detailed perspective are also additional duties of the cartographic sector. As an institution, the cartography sector is responsible for the planning and designing of different developmental projects. The projects are of different infrastructural sectors such as dam constructions, different road constructions, the construction of hospitals, and school buildings, bridge construction and repairing, and other developmental infrastructures. Being the head of the different institutions with the power of supervising and giving guidance and orders to the other institutions on what to make and how to make the implementation of the projects gives the cartography sector the responsibility for the collective institutional design of the projects and propose the responsibility of each institution how to operate on achieving the desired target.

Identifying and then selecting who is going to participate in the project is a very crucial aspect of institutional design, concerning the Eritrean self-reliance strategy on the construction of the different strategic dams is accomplished with the participation of different institutions from the Ministry of Agriculture, Ministry of Land Water and Environment, Ministry of Mining and Energy, Ministry of Construction, Ministry of Defence, members of the Local communities, and administrative zones. Each institution's contribution before the construction of the dams during the process of the construction and after the finalizing of the projects is very effective. Before the construction of the strategic dams, the cartography sector instructs different institutions which are selected to be part of the projects under construction. This is a clear indication that showed there is inclusive participation of the different institutions under the supervision of the cartographic sector. These institutions were given a responsibility to collect important information or data which is a fundamental aspect on the road to finalizing the project in a clear, planned, and transparent approach. The data which are collected by different institutions will play a critical role in the implementation of the design into a practical after being processed by the cartography sector for further study and planning. So the gathering of different data together in one sector is more effective and

easier in case of making decisions than having the data scattered all over the different institutions.

Following the processing of the data all the institutions which collected the desired data and information, conducted a face-to-face discussion between the different institutions to assess and evaluate what they have done so far. In advance of the construction of the dams visiting the site where the developmental project is going to be planted will be conducted by all the institutions then will have a face-to-face discussion and assess the project before a decision is approved by the EMIC for the starting of the project. Clarifying the reasons behind the selection of the area as a central region of a developmental project is always done based on the studies conducted by the different institutions. At this stage, the leadership or the sector which is responsible for the assessment or supervision of the projects will provide a clear work plan and detailed task for each institution that will motivate the collaborative process and make the self-reliance policy of the country successful.

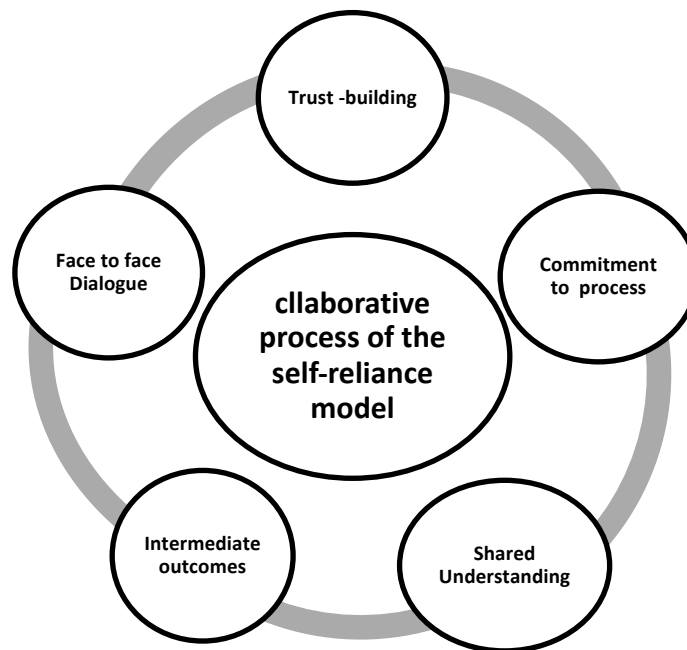
6.10.4 The collaborative process

Although all the dams which are small medium large or strategic dams are constructed with the collective of governance and self-reliance model of the Eritrean government, however, Misilam and logo dams are the main target of the study. All the dams constructed in the country pass through the same strategy and process however the level of the participants differs based on the objective and the contribution they make to the local community and the nation as a whole. The constructions of the dams are the outcome of the collaborative process of the different institutions of the government the same is applied to the building of the Misilam and Logo dams. Local communities and members of the domestic construction companies and other stakeholders are actively engaged in the success of these projects under the umbrella of the cartography sector which is led by the president's office.

All the dams constructed after the independence of Eritrea were constructed by depending on Eritrean resources without the interference of any external power. The Eritrean self-reliance model is applied through the collaboration of the different institutions. The nonlinear nature of the collaborative process is very challenging to represent the model in the self-reliance process however applying it in the form of a cyclical technique makes the process simple and easy to understand. Figure 5.3 below is a model I designed by modifying and reusing the variables used in the collaborative process part of the collaborative governance model of Ansel and Nash (2008) to express the collaborative process of the Eritrean self-reliance model. The model showed the collaborative process of the self-reliance model and witnessed that it is very challenging to identify the starting point from the different variables mentioned in the figure and the cyclical model tried to clarify the existing relationship to the

central idea which is represented by the collaborative process of the Eritrean of self-reliance model. The outer rings of the circle are represented by variables named face-to-face dialogue, trust-building, commitment to the process, shared understanding, and intermediate outcomes. The circle placed in the centre of the figure represented the core point which is the outcome of the variables located on the outer ring of the circles. Knowing the significance of communication as the core point of the collaboration process in applying the self-reliance model the variable face-to-face dialogue was selected to be the starting point of reference from the variables at the outer ring of the circles.

Figure 6.3: The collaborative process of the self-reliance model



A model modified from Ansel and Nash's collaborative model (2008)

6.10.4.1 Face-to-face Dialogue

The face-to-face communication starts from the preliminary process in the case of the Eritrean self-reliance model of collective of governance on the construction of the Logo and Meselam dams. In its first stage, communication starts when the Cartographic sector takes responsibility and then passes the information to the different institutions to conduct a pilot study. Based on the face-to-face dialogue the ministries of all the institutions were given their assignments to collect valuable information that supports the building of the dams in the targeted area.

In advance of the construction of the dams, there was a face-to-face meeting between the leadership and representatives of the different institutions to make a pilot study on the selected region to collect as much as available data that can support the construction of the data. Selecting the site where the dams will be constructed needs broad information or data which will play a vital role in the sustainability of the dams. The information is gathered from the expertise of different institutions and members of the local communities. In this case, the role of the topographic sector is to identify the location where the site is going to be constructed and the taking of an aerial photograph. The visiting of the site by different experts and making a face-to-face discussion with the local communities of the villagers is another issue that supports the gathering of valuable data on having a clear idea of the socioeconomic and lifestyle of the people.

In this stage after identifying the position where the location of the dams will be built, there will be a face-to-face discussion with the expertise of the Ministry of Mining and Energy and give them the responsibility to conduct a geological study both above and below the selected site to be the dam's access. The face-to-face discussions between the two parties have the advantage of identifying what kind of dams will be constructed and deciding whether it is a clay type of dam, gravel dam, stone-made dam, or concrete type of dam.

The role of a face-to-face discussion with the Ministry of Water Land and Environment also played a vital role in this stage. The ministry collected important and interesting data related to the annual rainfall, climatic conditions of the region, and the amount of underground water in the region. Identifying the small streams that flow around the region by looking at the futures related to the water capacity they carry, the velocity of their flow how strong they are, and the direction where they flow will support how to divert the water. This has a crucial task in identifying what the purpose of the water collected should be and how the water and the land should be managed without hindering the environmental structure of the region around the developmental projects. At the same time identifying the nature of the landform of the region plays a vital role in recognizing where the distribution structure should be built.

Having a face-to-face dialogue with the Administration of the Southern Region before the construction of the Meselam and Logo Dam has a crucial advantage. Similar to the other regions the climatic change and economic activities of the settlers are very crucial in identifying where to locate the developmental projects. The Southern Region can be divided into eight sections with different potentialities and opportunities for agricultural hub developmental programs. Due to the country's economic conditions and the lack of the required amount of expertise, manpower, machinery, and technology it makes it hard to run all the selected regions at the same time. However, the conducting of face-to-face dialogue

in a good faith of negotiation makes the job easier on making a decisive decision and start the project by putting several conditions and priorities. Finally, the Southern Region administration and the leadership make a decision and select Debarwa Subzone as a model of the main projects to start with.

6.10.4.2 Trust building

Face to face Negotiation without any trust-building among the stakeholders is pointless in the process of collaborative governance. Murdock, Wiessner, and Sexton (2005) witnessed that the presence of antagonism among the different stakeholders makes trust-building difficult to attain and this leads to face-to-face dialogue among the different stakeholders. In the case of the Eritrean model of self-reliance strategy before the starting of the building of the Meselam and Logo dams, there was a face-to-face dialogue between the government representatives and the representatives of the local communities in this case the government is the one who presented the plan of the construction of the strategic dams and the government send delegators to inform the local communities representatives about the project and its objectives on a detailed form and informed them to be part of the project and play their role on attaining the objectives. As part of motivation and an incentive, the government promised the local communities to be paid 500 Nakfa which is around \$ 20 US dollars at the current exchange rate, and 45 kg of grains monthly.

According to the Eritrean National Television, a documentary broadcasted under the title “*Diga Logo Dam transforms Lives & the Environment*” (Eri-TV 2021) members of the local communities said it is a strange phenomenon and they find it hard to believe because they don’t have any clue what they are going to do. On the other side, the government makes all the necessary infrastructural structures and the resources used for the construction of the dams ready on time. At this stage, the people of the villages started to be beneficial from the infrastructures introduced for the construction of the dams such as the plantation centres, water reservoirs, road infrastructures, electric power, and others. This motivates the local communities to have self-belief and built their trust in the government and the projects and worked on a different section of the project for more than two years from the starting of the basement of the dams until the final construction of dams. At this level, the trust among the government and the local communities was at its peak and suddenly the leadership informed the locals to be employed in the plantation centres in different sectors based on their profession and their abilities. This was continued for around eight years by being paid the 500 Nakfa and the 45 kg of grain and the locals' satisfaction with being members of the projects which are constructed based on the self-reliance policy is very high. The job

opportunity the local community gained from the project runs for more than eight years and this played a vital role in building a strong trust ship between the state leadership and the local communities.

There is another scenario that makes the trust ship between the leadership and the local communities stronger than ever. This happened when the government informed the local communities that the modern agriculture area which is cleared and cultivated in a scientific method by covering all the expanse of the projects from the very beginning to the end belongs to the seven villages that are actively participating in the activity that leads for the success of the projects. The government informed them as a reward for the hard work they showed in achieving the desired objective all the harvest of the agricultural centers belongs to them first they have to feed themselves and their families from what they cultivated then by sending the extra product which is cultivated from the field to the cities and played its role on stabilizing the markets and the villages will generate financial income that will be kept on the local villages bank to be invested on further developmental projects that can change the quality of life of the villagers. This motivates and encourages the trust-building among the local communities of the seven villages around the developmental dams and the different institutions of the government to be on their maximum pick which is very supportive of the achievement collaborative process.

6.10.4.3 Commitment to process

Different case studies conducted by Expertise indicated that the level of commitment by different stakeholders to the process of collaboration has a great role in identifying the success or failure of a mission (Alexander, Comfort, and Weiner 1998, Gunton and Day 2003, Margerum 2001, Tett, Crowther, and O'Hara 2003). Margerum (2002) expressed "member commitment" as the most important future that facilitates collaboration. The construction of big strategic dams is very demanding in terms of finance, commuted human resources, machinery, and other aspects. In his briefing on the ERi - TV documentary (2021) about the main objectives of the twin dams Engineer Berhane of Segen Construction Company which is taking responsibility for the building of the dams indicated that Meselam and Logo dams are designed to serve the capital city Asmara for the coming ten years they are also constructed by considering the population growth of the region in the coming 50 to 60 years. Billion Temesghen (2020) in his article "*Straightening the facts about Logo. . .*" indicated that the construction of logo and Mislam dams, goes beyond the conserving of "every drop of water" in the long term the projects are believed to be a real change-makers through the "introduction of modern agriculture, modern animal husbandry, youth

empowerment and provision of basic social services among others” (Temesghen 2020). To build such big dams the commitment of different institutions starting from the leadership to the lowest member of the mission is very crucial. Having different competitive domestic construction companies is a big asset for the country and very facilitative for the self-reliance policy of the country that supports the collaborative governance process which is achieved by the commitment and interdependence of the different institutions for a common understanding.

Out of the different domestic construction companies based on their long experience in the building of different infrastructural projects in Eritrea, Segen Construction Company is selected as the lead company to play the lead role in the construction of the dams. Segen Construction Company showed its commitment practically to the process by making the pilot study and design of the dams, the company also set up the required engineers, designers, and other experts that can help. Furthermore, the company identified the different types of machinery that can help in the building of the dams and prepared them for the job. Segen Construction Company cannot accomplish the job alone so looking for other institutions to be actively involved in the task is very imminent.

Identifying which institution will contribute more to a certain type of job and allowing the different institutions to serve in the profession that they master is very advantageous for finalizing the job on time. The Eritrean government believes in teamwork and interdependence of different institutions and each institution is assigned a duty that can outshine the others. Based on the face-to-face dialogue within the different institutions the leadership gives guidance to each institution and informed them on what task they have to do. As a result, both the Southern Region and Central Region Administrative Zones showed their commitment to the job by bringing construction expertise and advisors. Without the involvement of the Ministry of Defence, the job will be meaningless that is why the Ministry showed its commitment by making enough amount of manpower that is ready and dedicated for the job. Arguably Connell (2011) by mentioning that the Human Rights Watch report of 2009 he expressed that due to the open-ended conscription of National service majority of the Eritrean youth are under semi-enslavement. Opposite to this view on explaining the foundation of national service General Sebhat Ephrem expressed it by saying that “Even though each of the agelglot [national service conscripts] has between two and three children, they only receive 500 ERN [33 US\$] per month. How do they do it? Their reward is not a salary because the amount they receive is insignificant. Instead, patriotism (hilina) is the driving force. If a private firm were to take over, it would be solely driven by pecuniary interest rather than by patriotism” (Kibreab, 2017:65, Hirt and Mohammad 2021:29).

The Ministry of Land Water and Environment, the Ministry of Mining and Energy, and the Ministry of Development showed their commitment to the job by curing the cracks of the different rocks to protect them from further damage that may occur during and after the construction of the dams. Based on the task given to the ministry of agriculture it showed its commitment by identifying what kind of crops or plants can be best suited for the region and identifying where the agricultural field could be and making its expertise to be ready to give the desired training for the locals to improve their skills on how to shift from subsistence farmers to modern agriculture activities.

Success cannot be achieved without the will readiness and commitment of the individuals or institutions that are selected to do the job. The Eritrean army has a double mission the first mission is to defend the country from any external enemy and the second mission is to participate in the nation-building programs which are designed and planned by the state's leadership and ready to be implemented through the self-reliance model of the collaborative process. The Eritrean army is one of the institutions that possess the largest number of human resources in the country and this makes the ministry have a sense of shared ownership of the collaborative process by showing a great desire and commitment to the process. The commitment to the shared ownership process was proved by their readiness for the job and they worked 24/7 none stop shift-based from the beginning of the project until the end of the project. As time was ticking and the rain season was nearby, all members of the army worked collectively as a team and they showed collaboration with the local communities and work side by side. Unlike the negative narrations taught about Eritrea and its leadership the Eritrean strategy on food and water security was significantly supported and admired by Adesina (The President of African Development Bank). On his visit to Eritrea the president admired and shared his view and admiration by saying that "One of the things I admire most here is the sense of purpose, direction, determination, pride, and patriotism. The people are very determined to develop and have a sense of self-reliance and self-sufficiency. The big dams we visited are evidence of that," (AfDB News 2023)

Ownership implies shared responsibility for the process. Having a shared responsibility gives the way to build trust among different institutions that lead to a strong relationship among the stakeholders. A Member of the Eritrean army who is leading a group of personnel who are working on the dams expressed the shared ownership process by saying that "if there is a strong leadership there is a strong society and the strong society built a strong army. As the army is the result of society and the presence of a strong leader who guides society will lead the army to be a true servant of the people and the nation" (Eri-TV 2021). The developmental projects which are built around the Misilam and Logo dams prove the significant bond that existed between the leadership, the army, and the local communities

and other institutions to have the feeling of ownership and show their commitment to the self-reliance policy and attain the desired objectives.

The shared ownership of the process is an additional aspect of the commitment process in the collaborative process. One of the most famous slogans used by the EPLF is “*Politicize, Organize and Arm the Masses*” this doctrine is still applied as it is one of the basic foundations that lead to the success of the organization and there is a strong belief that the same terms are applied in this time for the success of the self-reliance policy. According to the Eritrean National Charter of 1994 development cannot be achieved without the participation of the people in all the stages of the project under construction. This should be attained by giving the chance to the public to be members of the projects starting from the planning of the project then the implementation of the process and finally the assessment of the project. In the case of the local communities of the villages around the Meselam and Logo Dams who are actively engaged in the construction of the dams by recognizing the shared ownership of the process, they are working hard for the effectiveness of the projects in an organized way and this is done with the support of different encouraging and motivational assistance provided by the leadership

6.10.4.4 Shared understanding

To be successful in achieving your objectives you have to show your readiness, your will, and own an enthusiastic leadership and stakeholders and individuals who own a shared understanding of the objectives and the purpose of the projects. The objective of the projects is clearly identified on the Warsay-Yikalo campaign of nation building strategy which was to embark up on all developmental sectors which are damaged by the war and build stable Eritrea. The main target of the campaign was to focus on various developmental programs which are listed as “infrastructure renovation and development, agricultural intensification and modernization, raising industrial output, mining schemes, the tourism sector, human resource development etc” Rena (2006:3).

The shared understanding of the projects pushed the leadership including the president of the state, and higher hierarchy members of the army personnel to work hand in hand for the success of the projects. This also built a strong bond between the manual builders, other ground technicians, and the machinery teams to work as a team for a common understanding. The nature of the good communication structure between the different groups which included the leadership, the expertise from different institutions, machinery operators, ground manual workers, and other stakeholders is a great motivation and pushed them to work firmly and makes the finding of a gap in the process very hard to identify.

Building such mega strategic dams with a water capacity that stretched from 14 million cubic meters of water to 330 million cubic meters of water depending on your internal domestic resources without the support of any external force is with a clear mission. The Logo Dam Construction Manager MR Salih Ahmedin in his interview with the ministry of information website shabait.com (2020) said that finally after accomplishing the construction of the dams after 14 challenging months of hard work all the participants members of the different institutions who are involved on the construction of the dams took a breath. on clarifying how challenging the job was he said it was very challenging, however “we had a vision” on clarifying the vision Mr. Ahmedin said that “ prior to the construction of the dam inhabitants of the villages in its environs had to pay 100 Nakfa and more for a barrel of potable water. Now they have running water in their villages” (Temesghen 2020). On the other hand members of the different institutions who are actively working on the projects in the interview conducted by ERI - TV (2021) expressed their main mission and objectives on what they intended to attain after the projects were finalized by mentioning several points.

- To attain success in the government’s policy
- To ensure the people have clean water to drink
- To secure food harvesting jump to three to four times a year
- To bring sustainable social security to the people.
- To bring change to the quality of life of society.
- Ensure the projects as a base for further developmental activities.
- To promote modern agro-industrial agriculture by replacing the old traditional method of agriculture.

Due to the common shared understanding of the different stakeholders in the collaborative process, it is very hard to identify who is the leader and who is the ordinary individual because everyone is carrying and building blocks in addition to the other activities they are doing. This is because of the value and the culture the Eritrean people have inherited from the experience of war for independence. The Eritrean people did a miracle by achieving their independence without the assistance of an external force and defeating the largest and strongest black African army of that time who was supported and armed by the great powers. As all those who are actively engaged in the building of the different dams are aware of the common value the nation possesses they know how the nation attained its independence through the sacrifice of their fathers, their sisters, and brothers and this pushed us to work hard to keep our value alive by fulfilling their promises.

Members of the army clarified the identification of the common value of the nation by telling that Eritrean history before independence is a culture of self-reliance rather than

dependence and this doctrine is implemented by the internal Eritrean capacity and resources. The members also mentioned that external support can be an extra power that pushes the project forward to the next level but cannot be a final solution. Three generations are actively engaged in the process and each generation owns its history and this is accepted as a chain of inheritance that keeps the value of the nation alive. The first chain of generations is the old generation who fought for independence and achieved their mission by gaining the independence of the country. The second chain is known for its assurance of the presence of the country by defending against the Ethiopian aggression in the border conflict that runs between 1998 and 2000. The third chain is the young and vibrant generation who is actively working on achieving the nation-building program of the country. In the making of these mega-dams, the three different generations worked as a team the first generation are the experienced members of the chain and passed their experience of the self-reliance model and the collaboration technique to the young generation by guiding them in the right direction where they should be and the majority of the second generation members of the chain are those who are on the middle age who own different skills and work as managers and expertise of different professions. While the third generation is the backbone chain of the developmental program that contains the majority part of the human resource and gains a lot of experience from the first two chains to accomplish the mission of developmental programs of the country.

6.10.4.5 Intermediate outcomes

The participation of different institutions in the building of the different projects brings several changes and this is part of win to win plans of the project. While the process of the collaborative process is ongoing it creates a lot of job opportunities for the local communities and has the feeling of being part of the projects. Another outcome that is achieved through the process is the introduction of new roads that solved the transportation problem between the villages and the cities which are closer to the nearby cities. The roads are constructed by domestic construction companies for the transporting of different construction materials and human resources that can help in the building of strategic dams. These roads played a vital role in bringing mutual gains because they are serving both the local communities and the construction companies.

The project also played a vital role in the army's vocational development by learning new skills and mastering the skills that they have. This proved that the building of the dams through the self-reliance policy didn't only build the dams but also built the manpower through the practical job they were involved in. Different professions and new skills were

mustered by several members of the army and transformed from normal laborers to professional builders, carpentry experts, different machinery operators, metal braces benders to different structures, and other skills that built their confidence. These experiences were obtained from the teamwork of the collaborative process that engaged all the age groups of the different institutions who own different work experiences and professions. The confidence that the local construction companies gained through the working experience of different projects can also be mentioned as one of the major intermediate outcomes obtained while the work is in progress. This helps the companies to gain a large experience in solving different difficulties that approached them in the mid of the task and find a quick solution to resolve the issue and give the companies to gain experience in how to resolve such difficulties on their next project.

The local communities also gave their witnesses by indicating that the government's relationship with the locals is very strong and believes the heavy investment starts to pay off and show its fruit while the job is ongoing. This is proved through the achievement that was seen practically on the ground both internally and externally. The internal change is the change that is experienced by the locals in their mode of life where financially they become more stable than before because they are transformed from individuals who used to harvest once in a year through the traditional mod of agriculture to wage earners that improved their income and this can be proved from the words of Mr. Bereket Tsehaye the Director of Planning and Statistics Division at the Ministry of Agriculture while interviewed by the Chairman of the Institute for Horn of Africa Strategic Studies Abdiwehab Sheikh Abdisamad by saying that the production of fruits in Eritrea has "increased by 71 times and that of vegetables by almost 6 times" (Abdisamad 2022) the increasing on the production of the fruits and vegetables has a great potential of generating income. In terms of external change, it is the change that someone can view the change made on the landscape. The locals indicated the difference in the view of the landscape before the starting of the projects and in the mid of the operation of the projects is huge and it is completely different. Before the construction of the dams, the land is barely dry and you don't view any variation the shrubs are very few and the wildlife is none existent while at the time when the construction of the dams was ongoing there was a variety of plants on the region and the appearance of the region was completely turned into the green with different kinds of wildlife for instance around the Logo Dam's neighborhood around 5000 fruit trees were planted by the local farmers which played a vital role on changing the appearance of the region (Temesghen 2020).

Table 6.4 below proved that by the end of 2017 and the beginning of 2018 the seven villages around Logo Dam are reaping the fruits of their hard work. The highland of Eritrea is not

familiar with such types of fruits and the final result is a big surprise to the villages. The villagers were amazed by the outcome they were more convinced about the profit they gained by growing cash crops an idea that was suggested to them by the government. www.geeskaafrika.com (2020). Planting such amount of trees played a vital role in generating income for the farmers and has a great role in changing the appearance of the landscape.

Table: 6.4. The number of cash-generating fruit trees around the seven villages around the logo dam at the beginning of 2018

Name of the plant	Number of plants planted
Orange	4415
Mango	4294
Guavas	3070
Coffee bean	22604
Lemons	548
Pome grante	278
Papay	132
Apple	65
Mandarins	80
Tamarind trees	45
Avocado	61
Shadoks	40

Source www.geeskaafrika.com (2020)

6.11 The Outcome of the Collaborative Process of the Self-reliance Policy

It is very hard to quantify the contribution the dams created and still creating to the local communities and the national economy. Most of the sites where the dams were built used to be dry arid environments. However, the construction of these dams brings a great transformation to the environment and lifestyle of society. On the other hand, the practicing of the self-reliance model is not without a challenge as the principle indicated it is against the dependence on external support it pushes toward isolation from the international communities. The positive aspect of the construction of the dams is the creation of jobs for the local communities, and the transformation of the traditional agricultural activity into modern agro-industry; it also played a vital role in the introduction of new infrastructural structures to the local communities. The outcome of the self-reliance model of the free choice policy Eritrea follows has both negative and positive outcomes. The positive outcome

can be mentioned as the economic contribution created by the construction of the dams while the negative outcome is the sanction that is imposed due to the policy the country is following.

6.11.1 The Economic Contributions of the Projects Made Through Collective of Governance and Self-reliance Model

The core objective of the Eritrean government is to secure the economic well-being of the Eritrean society. The government believes that the economic structure of the country must satisfy the need of the majority and improve the living conditions of the society. To attain these conditions the role of the government is to make the right strategy and policies that suit the economic development of the society. As a new and war-torn country after its independence of the country, the government took the lead responsibility for the economic development and indicate that the economy must be built on the basement of a self-reliance policy that engaged the Eritrean people (PFDJ Charter 1994:1998). The majority of the Eritrean population was actively engaged in traditional agricultural activity however to change this the government is working hard to construct different big, small, and large dams and several of these dams are strategic dams that are aimed at transforming the socioeconomic development of the local communities the Logo and Misilam dams are parts of the strategic dams which are contributing a great role on the economic development of the locals. The contribution of the investment on water projects on achieving sustainable water resources is huge as a result access to safe and clean water has increased massively throughout the country. It was reported that the rural population of Eritrea who are enjoying clean and safe water has increased from 7% in 1991 to 70% in 2021 while the urban population who enjoyed access to safe and clean water increased from 30% in 1991 to 92% in 2021 (Ministry of Finance and National Development

Soil and water conservation are fundamental objectives of the government. “In order to withstand the impacts of water scarcity and land degradation, adaptation activities commonly carried out in some parts of Eritrea include surface and ground water development, soil and water conservation, afforestation, reforestation and area closure” (Tesfanews 2023). Clean Water is the basic necessity of life similarly soil is a fundamental resource for agricultural activities. Based on those facts these twin dams have a great contribution to the day-to-day activities of the villages which are positioned in the region. People around the projects started to harvest various types of crops, fruits, vegetables, and others more than three times a year depending on the irrigation system compared to the

single harvest rain-fed agriculture they used to produce before the construction of the dams (ERi-TV 2021).

As it was explained earlier these dams are constructed to serve for the coming 50 to 60 years by putting into account the existing population and future population growth the region will contain. The expected developmental contribution of Misilam and Logo dams is massive in terms of industrial use the dams are the fundamental infrastructures that help the building of Halahale agro-industry and Azieb agro-industry. Domestically these dams are very effective to be witnessed by the relief they created for the locals for example before the construction of the dams' people are paying 120 Nakfa for a barrel of water. At the moment the government introduced different water distribution centres in each of the different villages around the area. Based on the elevation where the villages are located the water is distributed through a gravity system to the centre of the villages where they use public potable taps.

The locals expressed their happiness about having public taps in the centre of the villages by saying that it brings great comfort mainly to the vulnerable members of the community which are women and girls who are most affected by the distance they travel to fetch drinking water for more than two hours. Having this source of water brings joy because the time consumed to bring water from where they used to fetch is saved. Another advantage is the psychological pressure that they used to have is lifted because the students who used to bring water for their families start to have enough amount of time to study and their attendance record at school starts to be high. Overall the locals started to have clean and healthy tap water instead of the unhealthy and unclean source of water this has a great advantage in building a healthy community that can play a great role in contributing to the agenda of nation-building.

The building of these twin dams Misilam and Logo dams also creates a great job opportunity for the locals during and after the construction of the dams. People started to have the sentiment of being part of the project because more than 90% of the population started to be employed on the projects and in return for this they were paid both cash and grains as a monthly wage. This makes a great change in the life structure of the locals because they are shifting from subsistence farmers to wage earners who are generating income that supports them in improving their quality of life. The locals started to lead a sustainable job which is aimed to work for the long term by gaining different experiences. As the government introduced modern agricultural activities the locals developed new professions and started to be employed in different fields as guards, daily employees, road constructors, supervisors, clerks, time-keepers, and other activities.

As the platform is created by the government the locals' duty is identified clearly and explained to the locals to look after the projects of agricultural plantation centres, water resources, and other infrastructural structures. The working shift was fixed they started at seven mornings and finished by two evenings. And the settlers of the seven villages never look back for a job in the last eight years and they mentioned it as the happiest and the greatest opportunity they ever have on their life journey. The most astonishing and unexpected event happened after years of hard work and dedication of different professionals and the land was converted into fertile arable land and started to provide rich production the agricultural field was given back to the villagers www.geeskaafrika.com (2020). When the government informed all the villages around the developmental projects that they harvest and gained from the agricultural field belonged to them and it is their property. Despite the sanction severely affecting the economy of the country, the government didn't take any portion of the income the villagers generated from the agricultural fields. The government's main revenue source for funding the projects is based on diaspora tax which is considered one of the major sources of income for the government (Holly 2007, Kirk 2010, Laub 2015). In addition to this Eritrea owns significant deposits of minerals like gold, base metals, potash, industrial and construction materials, and other natural resources. These deposits of minerals attracted foreign investors from Canada, Australia, and China and these investors are actively investing their capital in the mining industry (Tesfa news 2013). The exporting of the minerals minimizes the burden caused by the sanction and the money generated from the selling of the products was very supportive in generating funds for different developmental projects including the construction of dams.

This experience of not charging the local communities for all the services provided by the government to them is strange and is not common in other parts of the developing world. In addition to this despite the product, they gained belonging to the locals they are still receiving their monthly wage in the form of 45 kg of grains and 500 Nakfa. "The locals expressed their joy by saying that it is very hard to believe because they are not ready that such an event is going to happen they are very thankful for what the government provided them and they wished the other parts of the nation have the same fortune "(ER TV 2021). Because they simply think that they are going to be considered as paid job workers on their land, however, the fertile arable land was converted into a community farm where the majority of the agricultural activities were run by the villagers. The income they generated from the cash crop they provide is used for common needs. Based on that "some villages have constructed schools and bought school materials for their kids and some others have agreed to reinvest their profit" www.geeskaafrika.com (2020).

In the initial stage of the project, there was a misunderstanding because they think that the government is playing a game to take their land. After all, the free land policy of the country said all the land belongs to the state. However, this view started to fade when they started to see and experience having different vegetables and fruits included in their daily meal compared to their traditional diet. Another contribution of the projects to the locals is the animal feed they acquire from the fields for free and this motivates the locals to practice animal husbandry these animals provided the communities with milk and other dairy products that played a vital role in getting reach protein products to keep them fully feed and help on having a healthy community.

This investment is accepted as a great asset that is aimed at the future generation which is why the leadership is investing a huge amount of money, manpower, and resources. Different experts were working hard and guiding the projects and supervising all the activities on a daily base. This helped both men and women of the community members to change their quality of life. Because of this project, the villages and the environment around them transformed completely from being rocky and dry land to a green landscape that contains different types of plants. This change happened with the participation, collaboration, and support of different governmental institutions and local communities. The local communities who are the beneficiary of the project said that “we have the will to transform to where we are however we don’t have the resource which can bring the change without the support and collaboration of the different institutions” (ERi – TV 2021).

Vocational training was also provided to the locals on how to deal with the new method of agriculture. The training which was given was a short-term course provided by inviting different governmental expertise to deal with water management, and soil conservation techniques, and inform the locals about the advantage of using animal dang over chemical fertilizers and the effect of pest sides. These kinds of training are provided for both male and female employees and it runs daily for one hour at the time of training any unusual behavior which is observed on the field must be reported and this played a vital role on the improvement of agricultural products. In addition to the cash paid by the government around 950 quintals of grain were paid for the locals who are actively working in the developmental activities. Water distribution centres are erected on the hills of every village and these reservoirs are built by Eritreans. Before the construction of the Misilam and Logo dams, the local communities used to practice rain-fed agricultural activities and cultivated only once a year however this activity was changed and the locals started to plant different kinds of fruits that can change their style of life and It was reported that with the construction of the twin dams more than 36000 fruit trees were planted on different parts of the agricultural field. If we see the numbers of fruit plants in number separately out of the total number orange fruits

are 4415 plants, Guava trees 3070, mango trees 3294, coffee plants 22,604 others such as avocado, papaya, tangerine are also common plants planted on the field of the seven villages and become the main source of income by generating cash (www.geeskaafrika.com 2020).

The change is not on the ground or landscape alone change also can be detected in the socioeconomic aspects of the society of the villages which are leaving closer to the developmental projects. The villages started to have their rural community banks where they started to save the money of the different villages and used it for the construction of different developmental infrastructures that can help for further development. People of the villages started to have a proper meal which is three times a day and they started to have a balanced diet that contains animal products, vegetables, and fruits. It is hard to believe the income of the community started to rise because everything changed and tangible results were seen on the ground. In addition to the wage they are being paid and the grain they took on a monthly base they have the right to take vegetables, fruits, and other products from the field to feed their family. When they are fully fed the remaining agricultural product of the field will be sold to the market and the income generated will be distributed among the villages. www.geeskaafrika.com in its report (2020) indicated that after the selling of the products of the cash crops the villagers will build schools or school materials for their children or reinvest their profit for further development.

As it is explained earlier the practice of growing fruit plants was not common in this region before the starting of the projects however the culture changed completely and the locals started to practice planting different kinds of fruit plants and they harvested more than 90 quintals of orange in 2020 and 30 quintals out of the total were distributed among the different villages and the remaining 60 quintals were sent to the market of the capital city ERi-TV (2020). These products have a great effect on stabilizing the market at the same time the income of the villages was showing great progress and the rural community banks' saving starts to grow. In addition to the different vegetables, they distributed to the capital city's market 20 to 30 quintals of mango were also supplied to the market. The money which was generated from the selling of these products was used for other developmental activities. The villages have committees which were selected by the local communities these three members of the committee look after all trading activity and negotiate with both the local administrations and the locals on several issues concerned to the villages. This committee has the responsibility to conduct research and find out what infrastructures are in need and send their report to the local communities of the villages to reach a final decision and bring solutions based on the priorities the public needs.

6.11.2 How Did the Developmental Projects Change the Quality of Life of the Local Communities?

The advantage of the construction of the dams in bringing direct or indirect change in the quality of life in the local communities of the villages is clearly expressed by the villagers by highlighting several aspects and these are explained below.

- Vulnerable women and girls are mainly beneficial because instead of walking for more than two hours to fetch water on their backs they started to have clean tap water inside their villages.
- The local communities started to have a balanced diet.
- With the construction of these projects, for the first time, the villages started to have electricity.
- The use of wood and animal dung for cooking was no more applicable after the introduction of the electric supply people started to use electric ovens and other cooking technologies and this helps on decreasing air pollution in the region.
- More time is saved and the health of the communities is secured that making life easier than before
- Every member has the right to be employed on the projects and started to secure a good income for their family
- Elders started to lead easy life because they started to have the main necessities of life such as water, energy, and food supplies inside their villages.
- Children of the villages also started to have more time to look after their school before the projects they used to study by using candles or pendulums light and this is history because of the electric light they have.
- The absenteeism and delay of students to school attendance were at their minimum because there is no time to lose to fetch water from the rivers or streams nearby.
- The people are the owners of the projects and shared the fruit of the product of the local community

6.11.3 The Sanction and its Effect on Eritrea's Development Programs

Sanctioning a country is a serious phenomenon and it damages the economic development activities and the reputation of a nation as a whole. According to the Security Council, the sanction imposed against Eritrea was mainly targeting both political and military leaders and other institutions which are directly or indirectly engaged in activities that support the Somali

Rebel groups. Experience tells that the ordinary civilians of the countries under sanctions are the ones who are mainly exposed to the hardship or suffering of the sanction instead of those who are working on the higher governmental officials (Sugrue 2010).

The possible outcome of the sanction against Eritrea can be attributed to the perspectives of the Eritrean and Ethiopian border conflict. Despite the war that started in 1998 and finally ended in 2000 with the final and binding Algiers agreement, however, practically on the ground the “*no war, no peace*” makes the situation more complicated mainly in the case of Eritrea (ICG 2008, Healy 2008). Due to the unresolved border conflict issue between Eritrea and Ethiopia, the tension was high and the imposing of an arms embargo on Eritrea put Ethiopia’s position at a peak position on the other side Eritrea was under great pressure and the country was positioned in an unsecured and vulnerable spot. Sudan Tribune (2011) reported that Ethiopia’s military budget was increasing at a fast pace and announced that the country spent around US\$ 100 million and bought 200 tanks. This puts the Ethiopian army at the highest morale on the other hand many Eritreans started to express their frustration by saying that the sanction is a great opportunity for the Ethiopian army to strengthen its position to the highest level. While the Eritrean military force stayed stagnant in the position where they are due to the unfair treatment of the sanction that let the country not purchase any sort of equipment related to military activities and the pressure is high again.

Galtung (1967), Wallersteen (1968), and Elliot (1998) pointed out that the efficiency of sanctions in achieving the desired objectives they need to attain is under great dubiousness. History is repeatedly proving that the United Nations Security Council’s imposed sanctions effectiveness towards the targeted leaders of the country under sanction is very limited however, the suffering and economic hardship the sanctions create towards the ordinary people is immense (Sugrue 2010). The same is true that Eritreans pass through devastating conditions as a consequence of the sanctions imposed on the country. To mention one of the negative impacts of the sanction could be if by chance a war broke down between Ethiopia and Eritrea at that time due to Eritrea’s inability to purchase the desired modern military equipment to defend the state’s sovereignty may be under a question mark. In addition to this, the sanctions damage the economic sector of the nation as most of the trade activities are conducted by the state-owned companies importing and exporting of goods become very restricted and difficult, due to this the price of consumer goods rises and the hardship of living starts, due to the sanctions the obtaining of necessities of imported goods such as medical supplies, construction equipment, food products, and fuel commodities become not easy. Furthermore on expressing the experience of sanctions and the challenges the country is passing through Yemane Ghebreab point out that “We had an experience with this during the previous nearly 10-year UN sanctions on Eritrea. Those UN

sanctions were an arms embargo, but people don't always read the fine print of sanctions resolutions on Eritrea. They just hear that Eritrea is under sanctions, so they don't want to deal with Eritrea" (Tesfanews, 2023). Beside to this the exclusion of Eritrea from the SWIFT system by the United States of America has a big impact on conducting international trade activities and this played a vital role on hindering the food security program because the importing of certain types of food grain from the international market is becoming more difficult. This hardship is expressed by Yemane Ghebream by saying that "countries excluded the SWIFT system have trouble conducting trade of all sorts because they can't complete financial transactions in dollars" (Tesfanews 2023). So the imprint these sanctions left behind towards Eritrea and its people is imminent and slowed down the developmental strategies of the country and the importing of food products and technologies needed to enhance food security.

To add more fuel to the hardship IGAD the organization which is mostly dominated by Ethiopia proposed the African Union and the United Nations Security Council put more sanctions against Eritrea. The objective of the proposal provided by IGAD (Intergovernmental Authority on Development) on June 28, 2011, was to target two main economic pillars that played a vital role in assisting the economy of the country to stand firmly. These sectors are the mining industry which is considered the main generator of foreign currency for the country and the remittent collected from the Eritreans Diasporas. Reports from outsiders noted that "the current efforts led by Ethiopia to impose tighter economic sanctions on Eritrea to prevent the exploitation of these resources is a further illustration of economic warfare" (Bereketeab 2013:155). The application of the sanction pulls the socio-economic development of the country backward and this is accepted as a negative outcome.

To mention another consequence of the sanction is the birth of the "no war, no peace" situation between the two nations. This situation holds the most effective and productive manpower of the country as hostages on the trenches of the battlefields of the border that connects instead of acting on the nation-building developmental activities. Due to this the policy of the developmental programs was obliged to shift from focusing a hundred percent on national development programs towards defending and building the nation at the same time. The youth are the ones who are supposed to build the nation at the same time they are the ones who have to defend the nation as well. A country like Eritrea with a small number of populations, located in one of the most strategic geographical locations at the same time known as the most hostile and unstable parts of the world makes life very difficult to survive. To tackle all of these challenges the sole solution of the government is to hold the resource

of the manpower and keep them safeguarding the nation for its survival by prolonging the national service of the individuals above the limit they were supposed to serve.

Eritrea is a country known for its hard work and paying a heavy price to achieve its independence without any support from outsiders but believing in self capabilities. The sanction imposed against the nation and its leadership played a great role in affecting the psychological and moral aspects of Eritreans. The hardship of life which was the outcome of sanctions and the brainwashing or the brain-drain of the Eritreans by the great powers lead to the migration of the productive manpower to the neighboring countries and then to Europe or the United Nations in search of a better life. According to the report of the UNHCR (2016:19) the neighboring countries of Eritrea both Ethiopia and Sudan hosted 165, 5000, and 103,200 Eritrean refugees respectively. In addition to this Germany hosted around 30,000 refugees, Israel was home to 27.800 Eritrean refugees Switzerland hosted 26, 300 while Sweden was home to 26,000 Eritrean Refugees (Tsegay 2020). The history of what Britain did to get rid of Eritrea to stand as a nation during the end of the Second World War has been repeated once more. Getting rid of the productive manpower is one of the main objectives of the great powers and this was mainly targeting the youth who can defend the nation from any foreign invasion and stands firmly for the existence of the nation, on the other hand, the youth are chosen as the main targets for the exodus campaign because they are the most energetic members of the nation-building programs of the nation. Life under sanction is hard at the same time getting encouragement by members of different organizations to leave the country for a better life makes the issue more complicated and the country started to lose hundreds of thousands of productive manpower brainwashed and leave the country for the search of new life either in United States, Europe, Middle East or other African nations. Regarding the report of the (Home Office 2015, Sturge 2019, Walsh 2019) in the last ten years Eritreans were ranked in the top ten on asking for asylum in the Uk and they were the largest members who granted asylum in the United Kingdom in the years of 2006, 2007. 2008 and 2014 (Sturage 2019:12).

The Obama administration was considered one of the main architects behind the motivation or the encouragement of Eritreans to leave the country and this was mainly recorded in the speech he addressed on the Clinton Global Initiatives on September 25, 2012, to delegators of different organizations which include, world leaders, different humanitarian organizations, business executives of different companies, NGOs and others. In his speech, President Obama said that *“I recently renewed sanctions on some of the worst abusers, including North Korea and Eritrea. We’re partnering with a group that helps women and children escape from the grip of their abusers. We’re helping other countries to step up their own*

efforts. And we're seen results. More nations have passed, and more are enforcing modern anti-trafficking laws" (Bidemariam 2020:153).

The statement addressed by President Barak Obama proved that the United States is explicitly working on motivating and supporting the Eritreans to leave their country and flee. This was mainly mentioned in the president's statement by indicating that his government is working hard by "partnering with groups that help women and children escape from the grip of their abusers." The message of this statement is crystal clear leave your country and we are ready to stretch our hands to support you. This was proved by providing Eritreans with different privileges immediately after they crossed the border of their native country. As much as you proved that you are Eritrean your asylum case will be granted and you will be provided a refugee status in different western countries like the USA Canada, Australia, and New Zealand, and Countries that are members of the European Union. "Sturage (2019) reported that 92% of the 25,385 Eritreans who applied for asylum in the European Union in 2017 were granted refugee status. Indeed this amount makes the second-largest asylum recognition rate of the year after Syrians (94%)" (Tsegay 2020: 67).

The Eritrean government said that the international community is the one to blame for the emigration of the youth who can produce more for the national development programs. The government blamed the international community for not keeping their promise of putting more pressure on Ethiopia to accept the Ethiopian Eritrean Border Commission decisions. The government also blamed the international community due to the unjustified sanctions imposed against Eritrea and the automatic asylum granting process to Eritreans (Bereketab 2016). Others said that Eritreans flee their country due to socio-economic and political issues (Tesema 2010, Tesema and N' Goma 2009) their chance of granting asylum is because of indefinite military conscription and political dominance (Sturge). This campaign of the exodus of Eritreans makes a big gap in the government's developmental programs and a large number of professional Eritreans and productive human resources were brainwashed by the agenda of the west and fled their country. In a situation like this, the first step the country took as an option was to depend on its resilient internal resource that the country owns and work hard to overcome all the challenges that the country faced and achieve what the nation intended to achieve.

As a nation, Eritrea changed the hardships of the sanction to opportunity and these happened by gaining the desired experience and relay on the available national resources and utilizing them in a manner that fit the developmental strategy of the country. The biggest lesson the country learned is to make your-self ready and be flexible and creative to adjust to the new conditions of hardship. Eritrea also owns a reach culture of tolerance which was

achieved from the thirty years of war for independence that addressed during a time of any illusion the country's leadership and its population has to show resilience and self-belief by relying on self and the allies who showed their readiness to cooperate and supported the country both during the good and bad times. The country also changed the narrative of the sanction by investing in the youth and preparing them to have dual jobs at the same time which is handing the national development program on one hand and defending the national sovereignty on the other hand.

6.12 The building of Halhale and Azieb Agro-industries

Both Halhale and Azieb agro-industries are located in Southern Region between the two twin dams Mislam and Logo dams aimed for dairy production. The Halhale Agro-industry is a state-owned industry that has more than 3000 cattle. These cattle are raised based on their ages, gender, and the purpose of their use. As some are used for meat production and some of them are for dairy production. The cattle raised in the industry are of different origins some of them are locals and some of them are imported from other countries to improve production.

The human resources employed in these factories are Eritreans who graduated from different colleges in the country such as Hagaz College of Agriculture, Hamelmalo College of Agriculture, Halhale College of Agriculture, Sawa Vocational College, and other vocational and technical schools. These individuals are graduates and holders of different professional qualifications. There are around 300 youths who are members of the different ethnic groups of the country both male and female employed in the industry. These individuals are working in different sections of the industry. This showed that the company is run by Eritreans who are working on believing the self-reliance model to bring change to the quality of life of the region. Those who are working in this industry said that the combination and collaboration of the different individuals with different backgrounds and work experience add more value to the company.

Planting such a huge agro-industry is very challenging at the start and there was a lot of up and down however with time the route started to change because a lot of experience was gained that pushed towards sustainability of the industry. Those who are working in the industry know their objectives and every section has the expertise that leads it to the next level. Some of them look after the well-being of the animals and make a health check-up of the animals daily if they observe unusual issues they make a straight report and look for a solution. This project's main strategy was to work as a team there is an expert who looks after the quality of food and those who look after the health of the animals during any

unusual scenarios the different teams collaborate to search for a solution to the unusual scenarios that happen. In addition to this, there is the process of sharing experience among the different teams those who are well-experienced professionals share their experience with the new starters and there is always a transfer of knowledge that played a vital role in the success of the industry.

The project's main target is the acquisition of new experiences and new technology which can help on keeping the animals healthy and productive indirectly this will have a great role in keeping a healthy society that can contribute to the developmental strategies of the nation. Those who are working in this industry are great assets that are the outcome of the government's investment. These individuals acquire their skills by being trained and educated at the expense of the government as it is in the policy of the government indicated that education is free from the very beginning of nurseries to the highest university levels. This was witnessed by those who are working in the industry by expressing their satisfaction by saying that it is a great opportunity for them because they are applying practically in the field what they learned theoretically in the different colleges where they graduated. Seen the final product of their contribution on the ground gives them a great motivation to work hard and appreciated the leadership for the opportunity provided to them.

Nationwide the farm has a great contribution to pushing the national development program forward both economically and human resource development sector. The different types of dairy products that are produced in this industry have a great effect on the stabilizing of the national market by bringing balance to the demand and supply of dairy products. This gives the chance of opening new distribution centers in different cities of the country where it gives job opportunities to different individuals. The job opportunity the industry creates in the field and outside the field helps the individuals on generating more income that helps on stabilizing their quality of life. The sharing of different experience among the graduates who are employed in the industry is a great achievement because most of the individuals are from different ethnic groups and their educational background is different as certificate holders, diploma holders, degree holders, and master's degree holders are working together it lets them have a united common and shared understanding of the project.

Before the construction of these strategic dams, the community used to practice the traditional method of animal husbandry technique. However, with the introduction of this project, the traditional method was transformed into a new modern way of animal farming technique. With the introduction of the new technique a new technology that was operated by Eritreans was also introduced. The introduction of the new technologies gave a great opportunity for Sawa and Adi-Halo vocational schools to provide training to a large number

of students who can operate different machinery. As part of the self-reliance model these individuals who are operating the new technologies are both male and female and are of Eritrean origin and trained in Eritrean vocational and technical schools and by Eritrean trainers.

The Halhale agro-industry has a data recording center where the most important information about each activity on the farm was stored. Unlike the old technique, the life history of each cow or bull was stored and this helped the project to have a clear image of identifying and evaluating the strength and weaknesses of the project and plan for the next level accordingly. The management of the project indicated that as each cow's information is stored in the database centre it is easy to identify where the project is heading on, to recognize what actions should be taken for further development of the project. This makes the database centre one of the most essential sections of the project which is operated by Eritrean professionals.

The artificial Breeding centre is also another sector that is operated by both male and female Eritreans who graduated from different colleges in the country. This technique helps in identifying and selecting the bull that the project is looking for. This technique simplified the workload of the project by identifying the desired kind of bull and importing sperm that matches the kind of bull the project is looking for. In this case, one shoot of the sperm can be diluted up to 150 times. This has a great advantage because the project is saving foreign currency and workload. After all, transporting the desired bull from the international market saves time, money, and energy-consuming.

The expense spent on food and hygiene of the animals makes it the most expensive sector of the project and demands a fund of 60% to 70% of the project's budget of the project and this sector was run by the local communities who are mainly employed in the agricultural sector where green food is planted. While those who graduated from different colleges as animal science experts and veterinaries collaborate on looking after the well-being of the animals (ERi-TV 2021). There are also quality control experts who look after the quality of the milk and other products. Those who are assigned to do the job are Eritreans who are members of the different ethnic groups of both male and female. All of those who are employed in the company have a shared understanding of the project, the government, and the state and said that the way how the country gained its independence is well documented in the history of the country. The first generation brings independence by sacrificing the unreplicable life and we have to keep the country self-sufficient in every aspect it needs this can be achieved by the hard work of its citizens by depending on their inner resources and capabilities.

Azieb agro-industry is a private dairy production industry which is located in the neighborhood of Halhale agro-industry. Mr. Abraham the manager of Azieb agro-industry indicated that the building of these twin dams is a great asset for the company because they are the lifeline of the industries. Mr. Abraham in his interview in the documentary aired by the Eritrean national television series number six that deals with the developmental activities around Logo and Misilam Dams ERI - TV (2021) indicated that “the building of the state-owned agro-industry is a great advantage for Azieb agro-industry because it gives us the advantage of sharing experience and building the faith of collaboration in case of need. When the state’s President visited the site he ordered the responsible governmental officials by saying that all the necessary infrastructural or materials have to be equally distributed among the privately owned and the state-owned industries” (ER TV 2021). This is considered a big opportunity for the Azieb agro-industry because it is one step forward in finding a solution for the limited resources it has mainly the water scarcity and other necessities the industry had before.

Mr. Abraham in his interview on the documentary conducted with ERI-TV (2021) also indicated that the main water source of the Azieb Agro-industry was the big water reservoir tankers that collected water during the rainy season. The water collected from the rain is not enough for the continuity of the industry so the industry has to look for another alternative water resource. April and May are identified as the driest months of the year these months are the toughest because of the water scarcity that challenges the life of the animals and the different activities of the industry. The option that the industry took during these challenging months was to purchase water from the nearby city of Debarwa. Buying tankers of water for the continuation of the industry’s life was expensive and this raises the expense of the industry. However, with the building of the strategic dams Meselam and Logo dams, the burden and challenges of water scarcity become a history of the past. Mainly the building of the Misilam dam helped the industry to be self-sufficient in water resources. The water was distributed through the gravity technique which was set up by the government. The new water distribution structure prepared by the government brings a huge change to the structure of the company. The industry started to expand its activities and it introduced the growing of green animal feed for the animals. This new sector opens a great job opportunity for the local communities and saved a large amount of money that used to be spent on dry animal food and others.

Manager of Azieb agro-industry Mr, Abraham said that the existence of the industry depends on the existence of the water generated from the Misilam dam. As the industry is working parallel to the government-owned agro-industry the connection is high and there is always a sharing of experience. Compared to Azieb Agro-industry the government-owned industry is

very huge and has both financial and human resources advantages. Believing that collaboration is a path to success they built a healthy connection with Halhale Agro-industry that aimed at mutual benefit and this played a vital role in the development of the industry and profits for both industries.

The objective of the Azieb Agro-industry is clearly stated by the manager by saying that “to supply enough amount of milk to the whole nation and have a share in stabilizing the national market. The company has a target of providing a bottle of milk to every Eritrean on his dining table daily the same as the developed world. This also has to be at a reasonable fair price and Eritrean children have to have the desired amount of protein from the dairy products and maintain their health and built healthy and strong citizens who can ensure the continuity of the nation” (ERi-TV 2021).

6.13 The position of the Horn of Africa and Eritrea on food sufficiency

BBC Africa on its August 19 broadcasts indicated that the “United Nations says that 22 million people in the Horn of Africa are at risk of starvation - a rise of nine million since the start of the year” (BBC News 2022). In clarifying the reason behind the starvation WFP says “the failure of four consecutive rainy seasons has pushed populations in Kenya, Ethiopia, and Somalia to the brink of famine” (BBC News 2022). The Somalia Star (2022), reports that “at least 18.4 million people in Ethiopia, Kenya, and Somalia are facing high levels of acute food insecurity and rising malnutrition, a figure that could reach 20 million by September”. BBC (2022) also reported that due to this catastrophic condition, more than a million people have been displaced from their homes in search of food and water. In exploring a solution to the crisis approaching the Horn of Africa, the WHO advised that the world has to be united and act before it is too late to prevent catastrophic hunger. An appeal for funds in January has faltered, with the war in Ukraine diverting donations and preventing normal grain shipments (BBC News 2022).

The strategy of Eritrea in the case of food and water security is different from the other countries of the Horn of African. “By 2021, the Ministry of Agriculture leaped from ‘food and nutrition security into ‘safe and nutritious food security,’” Bereket Tsehaye, Director of Planning and Statistics Division at the Ministry of Agriculture, reminded that based on the principle of every drop of water must be saved at any cost “Eritrea has now 785 ponds and dams, a figure that is markedly higher than the 138 ponds and dams the country had at independence in 1991” (The Somalia Star 2022). This had played a crucial role in increasing

the production of fruits in Eritrea by 71 times, and the production of vegetables by almost 6 times since the independence of the country

This proves that Eritrea is on the right track to accomplish the feeding of its people in the few years to follow without depending on any type of humanitarian aid or unexpected food imports from the global market. This is going to be an incredible achievement to attain in a country like Eritrea which possesses inconsistent rainfall. The agricultural system of the country is on the verge of transforming its agro-food system by shifting the traditional subsistence labor farm into modern productive agricultural employment power. The Minister of the Ministry of Agriculture Minister Arefaine Berhe on his information regarding Eritrea's progress in food and water security indicated that the country "had built the necessary agricultural infrastructure to feed its people by itself". Based on the statement that was made by Abdiwahab Sheikh Abdisamad the Chairman of the Institute for Horn of Africa Strategic Studies witnessed that "*according to an internal document that I've seen, a \$220 million, five-year plan to increase Eritrea's food security until the country becomes self-sufficient in food in a region that is grappling with a drought the UN says was "not seen in at least 40 years"*" (The Somalia Star 2022).

The Ministry of Agriculture indicated that the potentially arable land in Eritrea is around 2,1 million hectares of rain-fed fields and around 600,000 hectares which are convenient for the practicing of irrigational agricultural activities. Even though, the country was under UN sanctions for more than a decade more than 500,000 hectares of land are practically in operation and the productivity of cereals, pulses, and oil crops is showing a great increase from the past.

According to the annual report of the Ministry of Agriculture conducted at the beginning of 2023 soil and water conservation activities were conducted in more than 50,000 hectares of land however the report showed that it was less than the planned activity (Ministry of Agriculture Newsletter 2023). The report also indicated that 493,000 hectares of land which is 96% of the total planned were cultivated with cereals, legumes, and oil seeds in the 2022 colander year. The cultivation of crops was increasing by 84% growth the legumes cultivation showed growth of 7% while the oil crops cultivation showed 9% growth in 2022. In general crop production was increased by 9% in 2022 where there is a potential of improvement by increasing the level of productivity of a hectare. In terms of vegetables and fruits around 22,000 and 4600 hectares of land were cultivated respectively in 2022. The report also indicated that the ministry is working hard on improving the quality and quantity of livestock more than 1500 dairy cattle were artificially inseminated where the number of

dairy cattle registered growth of 11% in 2022. The practicing of bee farm was also increased from 34,000 to 39,000 in 2022 (Ministry of Agriculture Newsletter 2023)

Abdiwahab Sheikh Abdisamad the Chairman of the Institute for Horn of Africa Strategic Studies in his article in the Somalia Star (2022) said that “Despite limitations on access to agricultural technological advancements, I witnessed the country has implemented stringent measures to support crop production, including on-farm and off-farm soil and water conservation practices, crop rotation, introduction of production technologies, improved seeds, compost, bio-fertilizer, bio-pesticides and a variety of locally manufactured machinery. These don’t only assure Eritreans’ food security but they also enable the government to earn substantial foreign currency via agricultural and agro-industrial exports and import substitution” (The Somalia Star 2022). This can be a great lesson to other African countries and can borrow the experience from Eritrea which is a simple, cost-effective, and transparent system that can restrict the foreign aid that keeps the countries dependent forever and destroy their’ capabilities food and water security. African Development Bank president Dr Akinwumi Adesina shares the same view and requested the Eritrean government to consider the opportunity to utilize Eritrea’s engineering skills and capacity to support other countries on building different dams. On his own words Adesina remarked that “We must develop a way to support Eritrean engineers to assist other countries and perhaps even come up with the idea of establishing an African engineering corps that the continent can deploy to major engineering works in different countries” (AfDB News 2023).

Chapter Seven

Conclusion, Implication, and Recommendations

This is the last unit of the research paper and it deals with the conclusion, implication of the paper, and recommendations, opinions and the future plan of the researcher for further research are expressed in this chapter as well.

7.1 Conclusion

Eritrea is a country of struggle and challenges however this history is not yet explored. The lack of academic studies related to the country and the topic under investigation is one of the main factors that pushes me to conduct this research and this piece of work is going to play a vital role to act as a reference for other scholars to conduct further studies related to the region in general and Eritrea in particular. Different reports indicated that despite the high amount of foreign aid African countries received, they are still self-insufficient in feeding their people and providing clean water to drink however Eritrea a self-reliant country is almost securing its water sufficiency and is on its second stage of securing its food sufficiency (Tesfa news 2021). As a Sub-Saharan African country Eritrea believes that if the aid donor countries or organizations are not able to accept and adopt the Eritrean developmental programmes it is very hard to speak in agendas related to work as partners. All members of the Eritrean government leadership reflect and shared the same view when dealing with international donors and they mentioned that the conditionality' which were imposed by aid donors as annoying (Hirt and Mohammad 2021).

To avoid the dependence Eritrea followed collective of governance strategy of self-reliance policy the research paper points out the conceptual foundation of the Eritrean model of self-reliance policy which is assessed based on the model of collaborative governance adopted from Ansell and Gash (2008). Main challenges and economic contributions of the developmental projects in detail. As there is, a lack of scholarly research papers related to

the topic under study this paper did not depend on a specific piece of research however it is presented, on the reflection of different research papers which focused mainly on the model of collaborative governance as their focal point of references.

As a new country when Eritrea achieved its independence in 1991, the government received a war-torn country with poor or nonexistent public service. All development programs started from scratch. However, in the past two decades, the government established substantial funds to build a network of dams throughout the country to harvest water and guarantee incremental transition from traditional farming systems to modern agro-industrial methods supported by irrigation farming in pursuit of a program of food security. To attain the desired food and water security in the past 30 years the government built 785 big and small dams (Ministry of Information 2021)

Due to the outcome of the dominance of neoliberal globalization, transnational companies as the sole owners of global food production, processing, trading, and distribution (Akram-Lodhi 201, Clapp & Fuchs 2009) dominate the new food regime. As the competition of purchasing the desired amount of food is high and Eritrea was under sanction it is very tough for Eritrea to compete and generate food for its people and no supplier is willing to make a trade deal with Eritrea. So the only option left to the country is to use the resource the country owns and produce the amount of food needed to feed its people as a result the government imposed a collaborative, whole-of-society approach, that promote extensive consultation with lively participation of communities, different institutions, and several experts and stakeholders, by identifying the main priorities, goals, and tangible objectives,. This technique played a vital role on recognizing the critical challenges and vulnerable sectors or populations that hinders the national development program (Ministry of Finance and National Development 2021).

Due to the huge investment conducted by the Eritrean government access to safe and clean water has increased massively throughout the country. It was reported that the rural population of Eritrea who are enjoying clean and safe water has increased considerably from 7% in 1991 to 70% in 2021 while the urban population who enjoyed access to safe and clean water increased from 30% in 1991 to 92% in 2021 (Ministry of Finance and National Development) According to the annual report of the Ministry of Agriculture conducted at the beginning of 2023 soil and water conservation activities were conducted in more than 50,000 hectares of land however the report showed that it was less than the planned activity (Ministry of Agriculture Newsletter 2023).

The report also indicated that 493, 000 hectares of land which is 96% of the total planned were cultivated with cereals, legumes, and oil seeds in the 2022 colander year. The

cultivation of crops was increasing by 84% growth the legumes cultivation showed growth of 7% while the oil crops cultivation showed 9% growth in 2022. In general crop production was increased by 9% in 2022 where there is a potential of improvement by increasing the level of productivity of a hectare. In terms of vegetables and fruits around 22.000 and 4600 hectares of land were cultivated respectively in 2022. The report also indicated that the ministry is working hard on improving the quality and quantity of livestock more than 1500 dairy cattle were artificially inseminated where the number of dairy cattle registered growth of 11% in 2022. The practicing of bee farm was also increased from 34,000 to 39,000 in 2022 (Ministry of Agriculture Newsletter 2023)

As it is expressed in this research, the model of collaborative Governance is adopted from the framework of the collaborative governance model which is the work of Ansell and Gash (2008) and it gives a clear image of the four main broad variables that represent the whole model. The four main visible variables mentioned in this study are the *Starting conditions, institutional design, leadership, and collaborative process*. Further mini variables are generated from these four broad variables. In this study, the position of the collaborative process holds a central place in the model. While the other variables which are the starting conditions, institutional design, and leadership variables are considered the main supporters of the preciseness of the collaborative process. Ansell and Gash (2008) indicated that the starting conditions lay down the basic level of trust, conflict, and social capital that become assets or liabilities in the time of collaboration.

The conceptual framework of the collaborative process of the self-reliance model in *figure 6.3* can be an important conceptual framework for other models and also can guide other researchers so that the collaborative governance model can be further applied to other models. Based on the findings of the conceptual framework of the collaborative process on the self-reliance model it indicated that all the dams constructed after the independence of Eritrea are constructed depending on Eritrean resources without the interference of any external power and the process of the Eritrean self-reliance model become practical through the collaboration of the different institutions.

The nonlinear behaviour of the collaborative process in *figure 6.3* is very challenging to represent the model in the self-reliance process however applying it in the form of a cyclical technique makes the process simple and easy to understand. In The collaborative process of the self-reliance model identifying the starting point from the different variables is very challenging. However, the cyclical model clarified the existing relationship to the central idea of the process and this is represented by the collaborative process of the Eritrean self-reliance model. The outer rings of the circle in the model are represented by different

variables which are face-to-face dialogue, trust-building, commitment to the process, shared understanding, and intermediate outcomes. The circle placed in the centre of the figure stands for the core point which is the product of the variables located on the outer ring of the circles.

Based on the findings of the research Eritrean experience of the self-reliance model is quite an applicable principle however its demand is immense and asks for a lot of prices. On the other hand, there is an argument that said external support can be an extra power that pushes the principle of self-reliance forward to the next level but cannot be a final solution. As it is proved in the process for the success of the principle of self-reliance, in Eritrea a chain of three generations is actively involved in the process. And each generation enjoys its own history and this is acknowledged as a chain of inheritance that keeps the value and identity of the nation alive. As is expressed in the findings of the research the first chain of the generation is the old generation of the 1960s who assured the independence of the country. The second chain is known for guaranteeing the country's existence by defending against Ethiopian aggression during the border conflict between 1998 and 2000. The third chain is the young vibrant generation who is actively working on achieving the nation-building program of the country.

The research paper also clarifies that the building of the dams through the self-reliance policy didn't only build the dams but also played an important role in the building of the manpower through the practical job they were involved in. Different professions and new skills were acquired by several members of the army, the local communities, and other institutions who are actively engaged in the making of the projects and transformed them from normal labourers to professional builders, carpentry expertise, different machinery operators, metal braces benders to different structures, and other skills that built their confidence. These experiences were obtained from the teamwork of the collaborative process that engaged all the age groups of the different institutions who own different work experiences and professions. The manpower that was built through the experience gained from the process has a great role in the current national economical development programs and will play a vital role in the future as well. Depending on the Human Rights Watch report of 2009 Connell (2011) Mentioned that due to the open-ended conscription of National service majority of the Eritrean youth are under semi-enslavement. However members of the national service expressed this by saying that their main objective is to take Eritrea to the next level of development.

The building of dams of different sizes on your own without any international support is not without a challenge Eritrea passed through a lot of hardships and the sanctions imposed

against the country are the hardest obstacles of all. History is repeatedly proving that the effectiveness of the sanctions imposed by the United Nations Security Council towards the targeted leaders of the country under sanction is very limited however, the suffering and economic hardship the sanctions create towards the ordinary people is immense (Sugrue 2010). The same is true in the case of Eritrea due to the sanctions imposed by the Security Council the country and its people pass through devastating conditions. Eritrea's inability to purchase the desired modern military equipment to defend the state's sovereignty in the last ten years is one of the major challenges. In addition to this, the sanctions damage the economic sector of the nation as most of the trade activities are conducted by state-owned companies importing and exporting goods become very restricted and difficult to obtain. Because of the sanctions, the price of consumer goods rises and the hardship of living starts to increase, in addition to this fundamental necessities of imported goods such as medical supplies, construction equipment, food products, and fuel commodities become very difficult to obtain.

The "no war, no peace" situation between Eritrea and Ethiopia is also one of the fundamental problems of economic development. This situation holds the most effective and productive manpower of the country as hostages in the trenches of the battlefields of the border instead of acting on the nation-building developmental activities. For example In April of 2006, an estimated 300, 000 Eritreans were serving in the military (Reuters 2006). As a result, the developmental programs of the country were obliged to shift from fully focusing on national development programs towards defending and building the nation at the same time. The Eritrean youths are the ones who did and still doing double duties the first duty is the building of the nation and the second task is defending the nation. A small country like Eritrea with a small number of populations, located in one of the most strategic geographical locations is known as the most hostile and unstable part of the world makes life very difficult to survive. The only action the Eritrean government took to tackle all of these challenges as the sole solution is to hold the resource of the manpower and keep them safeguarding the nation for its survival by prolonging the national service of the individuals above the limit they were supposed to serve.

This research demonstrates that as a nation, Eritrea changed the hardships of the sanction to opportunity and these happened by gaining the desired experience and relay on the available national resources and utilizing them in a manner that fit the developmental strategy of the country. The biggest lesson the country learned is to make your self ready and be flexible and creative to adjust to the new conditions of hardship. Eritrea also owns a reach culture of tolerance which was achieved from the thirty years of war for independence that addressed during a time of any illusion the country's leadership and its population has to

show resilience and self-belief by relying on self and the allies who showed their readiness to cooperate and supported the country both during the good and bad times. The country also changed the narrative of the sanction by investing in the youth and preparing them to have dual jobs simultaneously which is handing the national development program on one hand and defending the national sovereignty on the other hand.

7.2 Implications of the study

The warehouse of African countries is either empty or full of aid grains that brought hope and satisfaction. Aid is accepted as a blessing by many countries and makes them less interested in the search for a long-term solution that pushes the countries out of the trap of food dependency because the governments and people of the countries adopted the norm of food dependency. This strong trap which is set up by the aid donors is very hard to ignore and we can see this practically with SSA countries. Even though, the countries have the potential and resources to be self-sufficient however the norm of dependency put them in the position of foreign aid reliance for survival. The current global issues related to Covid 19, climate change and the war between Russia and Ukraine bring the hardship of food shortage globally and the SSA countries as net food importers are the most affected nations by the current events and this proves that a short-term aid dependency cannot be a long-term solution to the food crises. Countries have to learn that the inability to practice their own skills will increase their failure and they will be obliged to sell their freedom of choice. Countries have to understand that achieving freedom through hard work is very demanding and bring sustainability however losing your freedom asks less time and damages your status. The reward of success demands hard work otherwise don't curse your problems they are your blessing during hardships. Finally, it is easy to say that Foreign aid is hurting Africa and the aid donors should share skills and knowledge with Africans instead of making African countries dependent forever.

Sub-Saharan African countries are the most vulnerable countries to the shock of climate change. This is due to the heavy dependence of the countries on agricultural and natural resources for survival at the same time the economical and political sectors of African countries are very weak. The trade connections and social communication among the different countries are poor. Sharing of ideas and experiences between the different countries of the continent is very poor this leads Africa to be a net importer of food and this can only be solved through the self-reliance model.

7.3 Recommendations

This section highlights the researchers' suggestions for identifying what actions should be taken in the future.

After the Russian-Ukrainian war, a series of western sanctions were imposed on Russia. The aim was to put more pressure on Russia and push the financial cost high however the damage did not stop there the sanction caused adverse damage to the global economic sectors and the SSA food supply sector was significantly affected by the crisis. So the huge damage to the food supply sectors caused by the sanctions and the decline of food production due to climatic changes in the region can be addressed by looking at a key solution that can clean up the mess. Practicing the self-reliance model through the collective governance strategy and building a convenient infrastructural platform through the collaboration of different institutions of a country can be a great asset in producing the amount of food the nation needs to achieve food security rather than waiting for others to produce for you.

At last, it can be said that African countries need capacity rather than aid, and to learn how to be free from dependence and exploitation by others. They have to learn how to be free and take care of their resource otherwise, the same cycle will be repeated and the core countries will be aid donors and the SSA will remain aid recipients forever. Unlike other African countries, Eritrea is a small country that was a scapegoat and sanctioned by the UN for more than a decade because of its self-reliance model of development; however, it is one of the few countries which are debt free and pressure-free from the World Bank and the IMF and the country is also on the path of achieving food and water security.

The following points are very supportive opinions of identifying what actions should be taken in the future.

- Eritrea has to open its economic policy and play its role in the global market by sharing its data and experience with other countries.
- Some forgotten areas like the Southern Red Sea Region of Eritrea have to be considered and the government has to start similar developmental projects that can lift the morale of the communities of the region.
- The superpowers and the United Nations have to learn that sanctions cannot be a solution to developing countries problems at the sametime countries under-sanctions have to learn to use sanctions as an opportunity that can prove their capabilities of doing.

- Developing countries have to borrow the self-reliance policy which is built on a simple and cost-effective techniques instead of depending on humanitarian agencies which are destroying their initiative of own food security capabilities.
- Practically aid dependency can not work in the case of African countries at all and cannot be the ultimate solution as well, Foreign aid is damaging African reputation and the west has to share knowledge and skills that can transform the countries from dependent to self-sufficient countries.

7.3.1 Suggestions for Further Research

The research is secondary-based qualitative research where the data are collected from different resources that explore the collective of governance and the self-reliance policy of the Eritrean government on achieving food and water security. The research also explored the main challenges the country was approaching while the projects are under construction and the economic contributions of the developmental projects.

Due to time and financial restrictions the research was conducted through a secondary data collection technique, to overcome these limitations I am planning to visit the research site and explore the reality on the ground through observation that will give me the platform to explore the environmental change on the landscape and have the chance to observe the developmental activities of the local communities. In addition to this, it is going to be a great opportunity to meet the people who are actively involved in making the projects happen and share their experience in the building of the projects and this will be attained through a focus group interview and semi-structured interview. Visiting the site will also allow me to visit the villages which benefited from the construction of the dams and include their demographic backgrounds and their role in the making of the projects and what are the benefits they gained from the projects. This will play a vital role on investigating the reality on the ground and cement the credibility of the research.

The research was restricted only to Misilam and Logo Dams however the research has to explore further developmental projects which are carried out around the entire strategic dams to have a broad image of the developmental projects of the country on food and water security.

References

- Abebe Shimeles, Verdier-Chouchane, A., Amadou Boly and Springerlink (Online Service) (2018). *Building a Resilient and Sustainable Agriculture in Sub-Saharan Africa*. Cham: Springer International Publishing.
- AfDB (2023). *Eritrea's Msilam Dam to bolster food security and change lives for the better*. [online] African Development Bank Group. Available at: <https://www.afdb.org/en/news-and-events/press-releases/eritreas-msilam-dam-bolster-food-security-and-change-lives-better-64060> [Accessed 5 Sep. 2023].
- african, N. (2011). *Afwerki: 'Self-Reliance Does Not Mean Isolation'*. [online] New African Magazine. Available at: <https://newafricanmagazine.com/2718/> [Accessed 14 Jul. 2022].
- Allouche, J. (2011). The sustainability and resilience of global water and food systems: Political analysis of the interplay between security, resource scarcity, political systems and global trade. *Food Policy*, 36, pp.S3–S8.
- Amahazion, F. (2016). *Ireland and Eritrea: Promotion development and food security*. Available at: <https://www.tesfanews.net/ireland-eritrea-promoting-development-food-security/> (Last accessed 15th Jun 2019).
- Anand, P., Pattanaik, P.K. and Puppe, C. (2009). *The Handbook of rational and social choice : an overview of new foundations and applications*. New York: Oxford University Press.
- Anon, (n.d.). *Eritrea Embassy Economy*. [online] Available at: <http://eritreambindia.com/economy/>.
- Ansell, C. and Gash, A. (2008). Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory*, [online] 18(4), pp.543–571. doi:10.1093/jopart/mum032.
- Balcilar, M., Tokar, B. and Godwin, O.-W. (2020). Examining the interactive growth effect of development aid and institutional quality in Sub-Saharan Africa. *Journal of Development Effectiveness*, pp.1–16.
- Behuria, P. (2016). Countering threats, stabilising politics and selling hope: examining theAgaciroconcept as a response to a critical juncture in Rwanda. *Journal of Eastern African Studies*, 10(3), pp.434–451.

Bereketeab, R. (2013). The Morality of the U.N. Security Council Sanctions against Eritrea: Defensibility, Political Objectives, and Consequences. *African Studies Review*, 56(2), pp.145–161. doi:10.1017/asr.2013.46.

Bernal, V. (2014). Eritrea Goes Global: Reflections on Nationalism in a Transnational Era. *Cultural Anthropology*. 19 (1), 3-25.

Berthoud, O. (n.d.). *institutional theories of organizations*. [online] ResearchGate. Available at: (PDF) Institutional theorhttps://www.researchgate.net › publication › 312572322 [Accessed 18 Jul. 2021].

Biedemariam, A. (2020). *The history of the USA in Eritrea : from Franklin D. Roosevelt to Barack Obama and how Donald Trump changed the course of history*. [United States]: [Lulu.com].

Bossel, H (1999). Indicators for sustainable development: Theory, method, applications. *Canada: IISD*. 1-124.

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D. and Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*, 25(8), p.174498712092720.

CHANG, H.-J. (2008). *Bad Samaritans The Myth of Free Trade and the Secret History of Capitalism* First ed. London: Bloomsbury Press.

Climate Check: East Africa drought - BBC Weather. (n.d.). *www.bbc.co.uk*. [online] Available at: <https://www.bbc.co.uk/weather/features/61764206> [Accessed 26 Aug. 2022].

Connell, D. (2011). From Resistance to Governance: Eritrea's Trouble with Transition. *Review of African Political Economy*, 38(129).

Creswell, J.W. (2012). *Educational Research : planning, conducting, and evaluating quantitative and qualitative... research, global edition*. S.L.: Pearson Education Limited

Creswell, J.W. and Poth, C.N. (2018). *Qualitative inquiry & research design: Choosing among five approaches*. 4th ed. Los Angeles: Sage.

Creswell, J.W., 2014. *A concise introduction to mixed methods research*. SAGE publications.

Crowther D and Lancaster, G. (2008). *Research methods : a concise introduction to research in management and business consultancy*. Oxford: Butterworth-Heinemann.

Da, C.A. and Food And Agriculture Organization Of The United Nations (2009). *Agro-industries for development*. Wallingford, Uk ; Cambridge, Ma: Cabi ; Rome.

Daly, H.E., and Cobb, J.B.C. (1994). *For the common good: redirecting the economy toward community, the environmental, and the sustainable future* (No. 338.9 D176f Ej. 1). Beacon Press.

Emerson, K., Nabatchi, T. and Balogh, S. (2011). An Integrative Framework for Collaborative Governance. *Journal of Public Administration Research and Theory*, [online] 22(1), pp.1–29. doi:10.1093/jopart/mur011.

Emerson, R.W. (2012). *Self-Reliance and Other Essays*. Dover Publications

EPLF (1987). *The Experience of the EPLF in the Pursuing the Policy of Self-reliance on the Economic Field*. Eritrea.

Erik Steinfeldt Reinert (2008). *How rich countries got rich ... and why poor countries stay poor*. New Delhi: Anthem Press India, Cop.

Eritrea and the 2030 agenda :: Voluntary National Review of progress towards the Sustainable Development Goals. (2022). *digitallibrary.un.org*. [online] Available at: <https://digitallibrary.un.org/record/3998870> [Accessed 23 Jun. 2023].

Eritrea Ministry Of Information. (2023). *Ministry of Agriculture Newsletter*. [online] Available at: <https://shabait.com/2023/02/06/ministry-of-agriculture-newsletter-2/> [Accessed 12 May. 2023].

Eritrea Ministry Of Information. (2023). *Statement by Mr. Mebrahtu Iyassu Mehari at the UN 2023 Water Conference*. [online] Available at: <https://shabait.com/2023/03/25/statement-by-mr-mebrahtu-iyassu-mehari-at-the-un-2023-water-conference/> [Accessed 22 April Jun. 2023].

Eritrea Ministry Of Information. (n.d.). *Eritrea: Achievements in Sustainable Development Goals*. [online] Available at: <https://shabait.com/2022/05/26/eritrea-achievements-in-sustainable-development-goals/> [Accessed 12 Jun. 2022].

Eritrea Ministry Of Information. (n.d.). *Logo is just the beginning*. [online] Available at: <https://shabait.com/2020/09/09/logo-is-just-the-beginning/> [Accessed 14 Sep. 2022].

Eritrea Ministry Of Information. (n.d.). *Straightening the facts about Logo. . .* [online] Available at: <https://shabait.com/2020/09/12/straightening-the-facts-about-logo/> [Accessed 03 Sep. 2022].

Eritrea Ministry Of Information. (n.d.). *Transforming Arid Zones into Wetlands*. [online] Available at: <https://shabait.com/2020/12/12/transforming-arid-zones-into-wetlands/> [Accessed 15 March 2021].

Eritrea profile. (2018). *BBC News*. [online] 15 Nov. Available at: <https://www.bbc.co.uk/news/world-africa-13349078>.

ERITREA'S DEVELOPMENT POLICY, ACHIEVEMENTS OF THE LAST 25 YEARS, CHALLENGES AND PROSPECTS Economic Advisor, Ministry of National Development DEVELOPMENT POLICY FORMULATION. (n.d.). [online] Available at: <https://www.ecss-online.com/2013/wp-content/uploads/2016/07/Eritreas-development.pdf>.

Eritrean Profile. (2018). Eritrea's water management policy. Available at: <http://www.shabait.com/eritrea-profile> (Last accessed: 22nd July 2019).

Eri-TV, Eritrea (Official (2020). *Part 6 Development around diga Logo & Misilam Dams - ERI-TV. YouTube*. Available at: <https://www.youtube.com/watch?v=bkEBYidhcP8> [Accessed 6 Jun. 2022].

Eri-TV, Eritrea (Official (2020). *ERI-TV: ረብሓ ዲጋ ሎጎ ን ኣብ ከባቢኡ ዘለዎ ሽውዓተ ዓድታት | Diga Logo dam transforms lives & the environment. YouTube*. Available at: <https://www.youtube.com/watch?v=HFssnyyv9wl> [Accessed 12 May. 2022].

Eri-TV, Eritrea (Official (2020). *መራሕትን ሰራዊትን ዘተሳተፉ ምህናድ ዲጋ ሎጎ - 7ይ ክፋል | Development around diga Logo & Misilam Dams - ERI-TV. YouTube*. Available at: <https://www.youtube.com/watch?v=bkEBYidhcP8> [Accessed 10 Jun. 2022]

Eri-TV, Eritrea (Official (2020). *መኣዝን ልምዓት - ምዕቃብ ማይን ኣመድን ከመኡ ድማ ምኽዝን ማይ | Successful water and soil conservation efforts - ERI-TV. YouTube*. Available at: <https://www.youtube.com/watch?v=tOQgrGKwTPU> [Accessed 14 APR. 2022].

Eri-TV, Eritrea (Official (2020). *መኣዝን ልምዓት: ዘመናዊ ፋብሪካ ጸባ ሓልሓለ | Modern dairy farm in Halhale, Eritrea - ERI-TV. YouTube*. Available at: https://www.youtube.com/watch?v=5eC__vWmsEE [Accessed 10 Aug. 2022].

Eri-TV, Eritrea (Official (2021). *Eritrean Dams: Cornerstone for National Development - ERI-TV, Eritrea. YouTube*. Available at: <https://www.youtube.com/watch?v=cz75R9a21S8> [Accessed 15 May. 2022].

Eri-TV, Eritrea (Official (2021). *መኣዝን ልምዓት - ረዚን ተልእኾ - ንብዳሂ ዕዮ ከርከቦት - ERI-TV. YouTube*. Available at: <https://www.youtube.com/watch?v=eJP9nP2Sa5w> [Accessed 03 May. 2022].

Estes, R. (2016). Towards sustainable development: From theory to praxis. *Social Development Issues*. 15(3), 1-23.

Feldman, Dave. Water Policy for Sustainable Development, Johns Hopkins University Press, 2007. ProQuest Ebook Central, <http://ebookcentral.proquest.com/lib/soas-ebooks/detail.action?docID=4398434>. Created from soas-ebooks [Accessed 31 October 2020]

Fisshatzion, A. (2017). *Eritrea: managing water resources to achieve sustainable food security*. Available at: <https://www.tesfanews.net/eritrea-managing-water-resources-sustainable-food-security/>. (Last accessed 22nd June 2019).

Friedmann, H. and Wayne, J. (1977). Dependency Theory: A Critique. *Canadian Journal of Sociology / Cahiers canadiens de sociologie*, 2(4), p.399. doi:10.2307/3340297.

Gaim Kibreab (2009). *Eritrea : a dream deferred*. Oxford: James Currey.

GebreMichael, K.H. (2016). Foreign Aid Effectiveness and Development Strategies in Eritrea: A lesson for Sub-Saharan African countries. *Journal of African Studies and Development*, 8(5), pp.49–66.

Geburu, T.A., Brhane, G.K. and Gebremedhin, Y.G. (2021). Contributions of water harvesting technologies intervention in arid and semi-arid regions of Ethiopia, in ensuring households' food security, Tigray in focus. *Journal of Arid Environments*, 185, p.104373.

geeskaadmin (n.d.). *Eritrea: The Harvest of Hard Work*. [online] www.geeskaafrika.com. Available at: <https://www.geeskaafrika.com/eritrea-the-harvest-of-hard-work/> [Accessed 14 Sep. 2022].

Ghebrehiwet, K. (2021). *Kerkebet Dam: Birth of a Lake*. [online] Tesfanews.net/. Available at: <https://tesfanews.net/kerkebet-dam-man-made-lake/> [Accessed May 11AD].

Gillis, M., Perkins Erkins, D.H., Romer, M. and Snodgrass, D.R. (1996). *Economics of Development*. Fourth Edition ed. New York London: Norton & Company.

González, H. (2010). Debates on food security and agrofood world governance. *International Journal of Food Science & Technology*, 45(7), pp.1345–1352

Habte-Tsion, H. (2016) *Sustainable aquaculture development and its role in the food security and economic growth in Eritrea: Trends and prospects*, Available at: http://www.researchgate.net/profile/H_Michael_Habte-Tsion2 (Last accessed: 12th October 2018).

Hamann, S. (2020). The global food system, agro-industrialization and governance: alternative conceptions for sub-Saharan Africa. *Globalizations*, pp.1–16. doi:10.1080/14747731.2020.1730050

Hanjra, M.A. and Qureshi, M.E. (2010). Global water crisis and future food security in an era of climate change. *Food Policy*, 35(5), pp.365–377.

Hirt, N., & Mohammad, A. S. (2021). Eritrea's self-reliance narrative and the remittance paradox: Reflections on thirty years of retrogression. *Remittances Review*, 6(1), 21-39. <https://doi.org/10.33182/rr.v6i1.1056>

Hommes d'Afrique Magazine ed., (2017). *Eritrea Conserving Every Drop of Water*. [online] <https://tesfanews.net/>. Available at: <https://tesfanews.net/eritrea-water-conservation-success/> [Accessed 15 Dec. 2020].

Hossain, A., & Marinova, D. (2006). *Principles for self-reliance and sustainability: case study of Bangladesh*. Available at: https://www.researchgate.net/.../252625110_PRINCIPLES_FOR_SELF-RELIANCE_AN. (Last accessed 20th Jul 2019).

Hox, J. J., & Boeijs, H. R. 2005. Data collection, primary versus secondary. *Encyclopedia of social measurement*, 1, 593-599.

Jaimungal, C. (2019). *Self Reliance, Agriculture and Ujamaa: Policies of Development in Postcolonial Tanzania*. [online] ResearchGate. Available at: (PDF) Self Reliance, Agriculture and Ujamaa: Policies of ...<https://www.researchgate.net> [Accessed 23 Jan. 2021].

Jiren, T.S., Dorresteyn, I., Hanspach, J., Schultner, J., Bergsten, A., Manlosa, A., Jager, N., Senbeta, F. and Fischer, J. (2020). Alternative discourses around the governance of food security: A case study from Ethiopia. *Global Food Security*, 24, p.100338

KABONGA, I. (2017). Dependency Theory and Donor Aid: A Critical Analysis. *Africanus: Journal of Development Studies*, 46(2), pp.29–39. doi:10.25159/0304-615x/1096Tracy,

Kaplan, S. (2016). *Eritrea's economy: Ideology and opportunity*. Available: <https://www.atlanticcouncil.org/publications/reports/eritrea-s-economy-ideology-and-opportunity>. (Last accessed 6th July 2019).

- Kotir, J.H. (2010). Climate change and variability in Sub-Saharan Africa: a review of current and future trends and impacts on agriculture and food security. *Environment, Development and Sustainability*, 13(3), pp.587–605.
- Mary Jane Smith and Liehr, P.R. (2018). *Middle range theory for nursing*. 4th ed. New York, Ny: Springer Publishing Company.
- Ministry of Agriculture Newsletter (2021). *Micro-dams promoting development and transforming communities*. [online] Available at: <http://www.ecss-online.com/2013/wp-content/uploads/2021/05/MoA-May-2021-Newsletter.pdf> [Accessed 11 May 2021].
- Moyo, D. (2009). *Dead Aid : why aid is not working and how there is a better way for Africa*. London: Penguin Books.
- Müller, T.R. (2012). From rebel governance to state consolidation – Dynamics of loyalty and the securitisation of the state in Eritrea. *Geoforum*, 43(4), pp.793–803.
doi:<https://doi.org/10.1016/j.geoforum.2012.01.009>.
- Müller, T.R. (2016). Representing Eritrea: geopolitics and narratives of oppression. *Review of African Political Economy*, 43(150), pp.658–667. doi:<https://doi.org/10.1080/03056244.2015.1111201>.
- New Africa Magazine. (2011). *Afwerki: 'self-reliance does not mean isolation'*. Available at: <https://newafricanmagazine.com/2718/> (Last accessed 13 June 2019).
- Olli Varis, Suvi Sojamo and Marko Keskinen (2020). *Enhancing Security, Sustainability and Resilience in Energy, Food and Water*. Mdpi Ag.
- Pincin, J.A. (2013). Political Power and Aid-Tying Practices in the Development Assistance Committee Countries. *Oxford Development Studies*, 41(3), pp.372–390.
doi:[10.1080/13600818.2013.812724](https://doi.org/10.1080/13600818.2013.812724).
- Prinet, E. J. (2000). *Self-reliance as a development strategy for low-income countries* (Doctoral dissertation, University of British Columbia). Available at: <https://open.library.ubc.ca/cIRcle/collections/ubctheses/831/items/1.0089327> (Last accessed 12th June 201).
- Purdy, J.M. (2012). A Framework for Assessing Power in Collaborative Governance Processes. *Public Administration Review*, 72(3), pp.409–417. doi:[10.1111/j.1540-6210.2011.02525.x](https://doi.org/10.1111/j.1540-6210.2011.02525.x).

Ramsey, K. (n.d.). *INSTITUTIONAL THEORY 1 Edwin Amenta*. [online] . Available at: <https://worldpolity.files.wordpress.com/2010/05/amenta-ramsey-institutional-theory-1.pdf>

Ravinder, R. (2008). WARSAI-YIKEAALO PROGRAM AND ITS IMPACT IN POST WAR ERITREA – A DEVELOPMENT PERSPECTIVE. *Asian African Journal of Economics and Econometrics*, 8(1), pp.99–109

Redclift, M.R. and Springett, D. (2015). *Routledge international handbook of sustainable development*. London ; New York, Ny: Routledge, Taylor & Francis Group

Rena, R. (2005). Challenges for food security in Eritrea: a descriptive and qualitative analysis. *African Development Review*, 17(2), 193-212.

ResearchGate. (n.d.). *institutional theories of orgonizations*. [online] Available at: (PDF) Institutional theory of organizations - ResearchGate <https://www.researchgate.net/publication/312572322> [Accessed 18 Jul. 2021]

Ritchie, J. and Lewis, J. (2003). *Qualitative research practice: A Guide for Social Science Students and Researchers*. London: Sage.

Ruggiano, N. and Perry, T.E. (2017). Conducting Secondary Analysis of Qualitative data: Should we, Can we, and how? *Qualitative Social Work*, [online] 18(1), pp.81–97. doi:10.1177/1473325017700701.

S.K. (2013). *Qualitative research methods : collecting evidence, crafting analysis, communicating impact*. Chichester: Wiley-Blackwell.

Sage, C. (2015). Food and Sustainable Development How Should we Feed the World. In: M. Redclift and D. Springett, eds., *R outledge International Handbook of Sustainable Development* . Newyork: Routledge

Sen, A. (1988). Freedom of choice. *European Economic Review*, 32(2-3), pp.269–294. doi:10.1016/0014-2921(88)90173-0.

Shabait (2017). *Gash Barka Region: An Agro-Industry Hub*. [online] Tesfanews. Available at: <https://tesfanews.net/eritrea-gash-barka-region-agro-industry-hub/> [Accessed 12 May 2021].

Shabait.com. (13AD). *Certainly, in Eritrea the experts on Eritrea are Eritreans.” Says Carol Pineau*. [online] Available at: <https://shabait.com/2019/07/13/certainly-in-eritrea-the-experts-on-eritrea-are-eritreans-says-carol-pineau/> [Accessed Mar. 17AD].

Silverman, D. (2011). *Qualitative Research : Issues of Theory, Method and Practice*. Los Angeles, Calif.: Sage

Sjöstedt, M. (2015). Resilience revisited: taking institutional theory seriously. *Ecology and Society*, 20(4).

Sjöstedt, M. (2015). Resilience revisited: taking institutional theory seriously. *Ecology and Society*, 20(4). doi:10.5751/es-08034-200423.

Smith, T. (1979). The Underdevelopment of Development Literature: The Case of Dependency Theory. *World Politics*, 31(2), pp.247–288. doi:10.2307/2009944.

Stevano, Sara (2014) Women's work, food and household dynamics: a case study of Northern Mozambique. PhD Thesis. SOAS, University of London.

Tang, K.-B. and Bundhoo, D. (2017). Foreign Aid and Economic Growth in Developing Countries: Evidence from Sub-Saharan Africa. *Theoretical Economics Letters*, 07(05), pp.1473–1491.

Temesghen, B. (2020). *Logo is just the beginning*. [online] Shabait.com. Available at: <https://shabait.com/2020/09/09/logo-is-just-the-beginning/> [Accessed 28 Apr. 2021].

Tesfamicael, B.A. and Andel, J. (2005). *University of Groningen Poverty and natural resource management in the Central Highlands of Eritrea Araya Tesfamicael, Bereket*.

[online] www.semanticscholar.org. Available at:

<https://www.semanticscholar.org/paper/University-of-Groningen-Poverty-and-natural-in-the-Tesfamicael-Andel/f564b4ec5e96f917638122315517ac13cd46a7e2> [Accessed 15 Jun. 2022].

Tesfamichael, H. (2017). *Food security through Wheat Productivity*. Available at: <https://www.tesfanews.net/food-security-through-wheat-production/>. (Last accessed 27th June 2019).

TesfaNews (2017). *Three Advantages of the Eritrean Water Dam Network*. [online]

TesfaNews. Available at: <https://www.tesfanews.net/three-advantages-of-the-eritrean-water-dam-network/> [Accessed 27 Aug. 2022].

TesfaNews (2023). *US Still Imposing Illegal, Unilateral Economic Sanctions on Eritrea*. [online] Available at: <https://tesfanews.net/washington-still-imposing-illegal-economic-unilateral-sanctions-eritrea/> [Accessed 5 May. 2023].

Tesfay, M. (31AD). *securing water supply in Eritrea*. [online] Shabait.com. Available at: <https://shabait.com/2021/03/31/securing-water-supply-in-eritrea/> [Accessed Apr. 5AD].

The global food crises. (n.d.). [online] . Available at: <https://www.un.org/esa/socdev/rwss/docs/2011/chapter4.pdf>.

The Somalia Star. (n.d.). *Eritrea's push to become self-sufficient in food is gaining steam*. [online] Available at: <https://www.thesstar.com/eritreas-push-to-become-self-sufficient-in-food/> [Accessed 20 Aug. 2022].

Thirlwall, A.P. and Penélope Pacheco-López (2017). *Economics of Development : Theory and Evidence*. London: Palgrave, An Imprint Of Macmillan Publishers Limited.

Trainer, T. (1989). *Developed to death: rethinking Third World development*. Green Print.

Trauger, A. (2015). *Food sovereignty in international context : discourse, politics and practice of place*. London: Routledge.

Trauger, A. (2015). *Food sovereignty in international context : discourse, politics and practice of place*. Abingdon, Oxon [UK]: Routledge.

Tsegay, S. (2020). *SOCIO-CULTURAL INTEGRATION OF HIGHLY EDUCATED ERITREAN MIGRANTS IN THE UK*. [online] <https://pure.roehampton.ac.uk/>. Available at: <https://pure.roehampton.ac.uk/ws/portalfiles/portal/3305635/> [Accessed 11 May 2021].

UNDP. (2011). *Strengthening the capacity of the Water Resources Department*. Available at: http://www.er.undp.org/content/eritrea/en/home/operations/projects/environment_and_energy/strengthening-capacity-of-water-resources-department.html (Last accessed 11th July 2019).

UNDP. (2015). *Sustainable Development Goals*. Available at: https://www.undp.org/content/dam/undp/library/corporate/brochure/SDGs_Booklet_Web_En.pdf (Last accessed 17th Jun 2019).

United Nations. (2014). *Delivering Together for Eritrea's Development and Self-Reliance*. Available at: <https://www.afro.who.int/.../eritrea-delivering-together-eritreas-development-and-self-> (Last accessed 29 June 2019).

United Nations. (2017). *Permanent Mission of Eritrea to the United Nations New York*. Available at: https://gadebate.un.org/sites/default/files/gastatements/72/er_en.pdf. (Last accessed 25th March 2019).

Vita. (2015). *Vita Potato and Dairy Farm Pilot Project in Eritrea*. Available at: <https://www.tesfanews.net/vita-potato-dairy-farm-pilot-project-in-eritrea/>. (Last accessed 18th July 2019).

Walliman, N. (2018). *Research methods*. Abingdon, Oxon Routledge.

WELDE GIORGIS, A. (2014). *ERITREA AT A CROSSROADS*. FIRST ed. Houston: Strategic Book Publishing and Rights Co.

WorknehNegatu, Musahara, H. and Eastern, I. (2016). *Innovations in achieving sustainable food security in eastern and southern Africa*. Addis Ababa, Ethiopia: Organisation For Social Science Research In Eastern And Southern Africa (Ossrea).

www.fao.org. (n.d.). *The State of Food Security and Nutrition in the World 2020*. Available at: <http://www.fao.org/3/ca9692en/online/ca9692en.html>. [Accessed 20 Dec 2020].

www.studypool.com. (n.d.). *Studypool Homework Help - Institutional theory*. [online] Available at: <https://www.studypool.com/documents/13588320/institutional-theory> [Accessed 11 May. 2022].

www.wfp.org. (n.d.). *Greater Horn of Africa Climate Risk and Food Security Atlas 2018 | World Food Programme*. [online] Available at: <https://www.wfp.org/publications/greater-horn-africa-climate-risk-and-food-security-atlas-2018> [Accessed 5 Jul. 2022].

Zerai, E. (2006). *ASSESSMENT OF AGRICULTURAL INFORMATION NEEDS IN AFRICAN, CARIBBEAN PACIFIC (ACP) STATES FOR CTA's PRODUCTS AND SERVICES AFRICACOUNTRY STUDY: ERITREA*. [online] CTA. Available at: <http://docplayer.net/178261529-Project-c.html> [Accessed 3 Feb. 2022].

Zere, R. (2018). *Does Foreign Aid Undermine "Self-Reliance"? The Case of Eritrea*. [online] Available at: <https://core.ac.uk › download> [Accessed Feb. 5AD