COLLEGE OF DEVELOPMENT STUDIES

CENTER FOR FOOD SECURITY STUDIES

THE CONTRIBUTION OF REMITTANCE ON RURAL HOUSEHOLD FOOD SECURITY IN MISHA WOREDA, HADIYA ZONE ETHIOPIA

TESHOME EREHINCHO (GSE/3472/10)

A THESIS PROPOSAL SUBMITTED TO CENTRE FOR FOOD SECURITY STUDIES, COLLEGE OF DEVELOPMENT STUDIES, ADDIS ABABA UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN FOOD SECURITY AND DEVELOPMENT

NOVEMBER 2022

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Declaration

This thesis proposal is a result of my original research effort, and it has not been submitted to any other university for consideration for any academic degree, I, Teshome Erehincho Ergo, thus certify to Addis Ababa University School of Graduate Studies. Both my own original work and other people's work are recognized.

Name: Teshome Erehincho Ergo

Signature: _____

Date of Submission: November 2022

Supervisor's approval

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge as an advisor.

Approved by: _____ _____ _____

Thesis Advisor Signature Date

Approval Sheet

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As supervisors/co-advisers of the thesis, we certify that we have read and evaluated the thesis prepared by Teshome Erehincho Entitled '**The Contribution of Remittance on Rural Household Food Security in Misha Wereda, Hadiya Zone Ethiopia'** and recommend for Open Defense as fulfilling the requirement for the degree of **Master of Science Degree in Food Security and Development Studies**.

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Name, Major Advisor Signature & Date

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Name, Co-advisor Signature & Date

As members of the Examining Board of the Thesis Open Defense, we certify that we have read and evaluated the thesis proposal prepared by Teshome Erehincho Entitled '**The Contribution of Remittance on Rural Household Food Security in Misha Wereda, Hadiya Zone Ethiopia'** and recommend that it is acceptable as a proposal for the thesis required for the degree of Master of Science Degree in Food Security and Development Studies.

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Name, Internal Examiner Signature & Date

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Name External Examiner Signature & Date

Final approval and acceptance of this thesis is contingent upon the candidate's submission of the final copy of the proposal, incorporating all the comments by Examining Board, to the Council of Graduate Studies (CGS) through the Centre Academic Committee (CAC) of the Centre.

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Acronyms

AFI	Alliance for Financial Inclusion
AHHH	Age of Household Head
AML	Anti-Money Laundering
CFT	Combating the Financing of Terrorism
COVID-19	Corona virus disease 2019
CSI	Coping Strategy Index
EDA	Ethiopian Diaspora Agency
EDU.HHH	Education of Household Head
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
FPO	Family at the Point of Origin
FSHH	Family Size of Household
GDP	Gross Domestic Product
GERD	Grand Ethiopian Renaissance Dam
GoE	Government of Ethiopia
GIS	Geographic Information system
HFIAS	Household Food Insecurity Access Scale
IFAD	International Fund for Agricultural Development
IM	International Migration
IMFM	Internationally Migrated Family Member
IOM	International Organization for Migration
KII	Key Informant Interview
NGO	Non-Governmental Organization
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PSM	Propensity Score Matching
PSNP	Productive Safety Net Program
RRHH	Remittance Receiving Household
RSA	Republic of South Africa
RSP	Remittance Service Providers

SEX HHH	Sex of Household Head
S.CUL. LAND	Size of Cultivated Land
SNPPRS	Southern Nations Nationalities and Peoples Regional State
SSA	Social Security Administration
STATA	General Purpose Statistical Software package
UAE	United Arab Emirates
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UNICEF	Originally -United Nations International Children's Emergency Fund Now officially- United Nations Children's Fund
US	United States
USD	United States Dollar
VIF	Variance Inflation Factor
WFS	World Food Summit

Glossary for Local Terms

Ensete:	(Ensete Ventricosum), Sometimes also called false banana, and Abyssinian banana. It is grown in Ethiopia and it is an important staple food for the community of southern and soothe-west area of the country. It is starch-rich plant
Hadya:	One of the administrative sub-divisions in Ethiopia under Southern Ethiopian Peoples Nations and Nationalities
Hamicho, Kocho, Bu'ela, Bilanbilo, bue'mocho:	Types of foods extracted from Ensete plant and prepared in different ways to feed in their context of preparation
Kebele:	A sub-division under woreda which is the smallest administrative unit in rural Ethiopia
Meskel:	Public holyday marking the finding of the "true cross" on which Jesus Christ was Supposedly crucified. It is celebrated in September 17 Ethiopian Calendar every year (27 or 28 September in Gregorian Calendar). It has its own cultural and religious implication
Misha:	The name of one of the woreda's in Hadiya zone which is the study was conducted in selected kebeles
Wijjo:	Collecting milk in a group of three or five individuals in their neighbors to maximize their better and other milk products for a week or agreed days turn by turn
Woreda:	Administrative sub-division under Zone which is the smaller administrative unit in Ethiopia
Woina Dega:	The temperate Woina Dega zones, where much of the country's population is concentrated, in areas between 1,500 and 2,500 meters above sea level where temperatures range between 16°C and 30°C[1]

[1] Climate Change Knowledge Portal, For Development Practitioners and Policy Makers: https://climateknowledgeportal.worldbank.org/ Accessed on Thusday October 11, 2022 @12:10pm

Abstract

One of the main sources of income for those living in developing and low-income countries is remittances. Using cross sectional data at the household level, the main objective of this paper is to evaluate the impact of remittance money on the state of food security in rural households. A mixed approach is used to gather quantitative and qualitative data, including a survey of 391 household in the rural kebeles of Siko, Gunnabonochora, and DilbaraMago in Misha woreda, Hadiya zone. The study employed questionnaire, FGD, KII, and secondary data to collect substantiated information from the study area. The study compares the food security situations of households who receiving remittances and those who are not receive remittances. Household Food Insecurity Access Scale (HFIAS), Coping Strategy Index (CSI), and Household Food Balance (HHFB) models are employed to measure the level of food insecurity, food balance, and their coping strategy. STATA15 software is used to analyze the quantitative part focusing on ordered logistic regression model. HFIAS results shows that 49.10% (192) households are moderately food insecure, and 35.55% (139) households are severely food insecure. In terms of CSI result 39.13% (153) have medium CSI, and 35.29% (138) have high CSI. Using ordered logistic regression access to remittance was statistically significant. Households in Hadiya zone culturally must celebrate the Meskel (The finding of the true cross) holy-day whether they are receiving remittance or not and they spend more of their income on it. In this case, in the large amount of remittance money spent for the Meskel event. Considering the findings, the author recommends awareness creation in both remittances sending and receiving ones. The study provides insights into why some households transform themselves from a 'consuming' to an 'investing' entity, while others continue to depend on remittances for subsistence.

Key words: International Migration, Impact of Remittance, Food security/insecurity status

Dedication

This thesis is dedicated to Ethiopian migrants who left their rural kebeles in the Hadiya zone, Misha woreda, Dilbaramago, Guna-Bonochora, and Siko in search of their dream land, RSA, which they believed would provide them with better opportunities. Some of these migrants drowned in the sea, died in a desert from thirst and hunger, and others died in a truck's back seat from asphyxiation (suffocation).

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

One of the biggest problems in these days in every country is ensuring food security. Basically, in most low-income countries this is critical case. The issue of food insecurity affects people's capacity to be productive, their health and education, as well as their human rights and equality.(Welteji et al., 2017) The FAO estimates that one in three people worldwide experience some kind of food insecurity, which leaves 2.37 billion people without access to enough or equitable food by the year 2020. Along with ongoing issues with food security, the COVID-19 pandemic significantly worsened hunger around the world. Up to 320 million people have become more and more food insecure in the past year (2020). One of the pivotal years in human history was the year 2020. Almost 12% of the world's population suffered from severe food insecurity. There are 928 million individuals worldwide that are severely food insecure. If we extrapolate from 2019, an additional 140 million people have experience food insecurity in 2020.(FAO, IFAD, UNICEF, 2021).

In the opinion of Pieters and his colleagues, one of the most significant jobs in human existence, is to reverse the recent global trend of hunger and food insecurity.(Pieters et al., 2013) Households adopt a variety of strategies to combat food insecurity, from alternative local and community-based coping mechanisms to international migration. Sending money and other remittances to one's family is the primary result of foreign migration, whether it is regular or irregular. There are two kinds of migration by the pushing factors. Large-scale forced migration due to war and natural catastrophes, and movement for socioeconomic reasons, are most prevalent realities in our world today. In other instances, voluntary migrations are also a result of driving forces, specifically studying the overt state of the returnees and gathering data.

Migration is movement of people from one place to another started since ancient times in different parts of the world, the frequency and intensity of inflows of people varies from one continent to the other and from one country to the other. An individual or group of people moving across an

administrative or political border from one geographical entity to another with the intention of settling either firmly or temporarily in a location other than their place of birth is known as migrating (Thomas K. Bauer & Schmidt, 2004). The process of migration has diverse economic, social and environmental implications for the place of origin. In the context of balanced regional development, it is important to study how international migration affects the patterns of household's living standard within a country and quality of life of the place of origin specifically in addressing the food security issues.

According to World Migration Report, 3.5% of the world's population, which are 272 million migrants were identified in 2019. Of them, 52 percent of international migrants were male; and the remaining 48 percent were female. In most case international migrants, which are 72 percent of the total migrants are in their working age, from the age 20 to 64 years old. The world's leading countries in terms of origin in migrating to other countries were India, having the largest number of migrants living throughout the world accounts 17.5million peoples, Mexico and China found to be in second and third, countries having 11.8million and 10.7million migrants abroad respectively. In relation to destination, United States of America is the dreamland for most migrants throughout the world, hosts 50.7 million international migrants. As it is known one of the expected benefits of international migration is sending money and other materials to the family members in the area of origin known as remittance. In this case, US are the major remittance sending country in the world. As mentioned in the above report US sends USD68.0 billion followed by the UAE USD44.4billion, and Saudi Arabia USD36.1 billion. The other fact that is recorded in the same report is the countries those who are the top recipient of remittance from the mentioned countries. India USD78.6 billion, China USD67.4billion, and Mexico USD35.7 billion received respectively (Foad et al., 2015). Therefore, international migrants send money and goods in the form of remittance for their family at the point of origin. So that, remittance is explained as follows for understanding its flow and contribution for food security situation.

According to Migration and Development Brief 37, To reach $626 billion in 2022, remittances to low- and middle-income countries (LMICs) are expected to rise by an estimated 5%. Still, there are downside dangers (Remittances Brave Global Headwinds, 2022, vii). Migration and remittance have an important role in ensuring poverty reduction of the family at the point of origin.

In most low-income countries, migration, whether national or international has become a major source of income for households in rural or urban areas of origin. This is due to the fact that it supplies migrant households with remittances that are unrelated to agricultural revenue. Migrant remittances are thought to have a significant influence on the socioeconomic situations of families left behind in their native country. Though, most remittances registered in SSA account for a small percentage of global remittances, formal flows to the area were estimated at USD 33 billion in 2013, with Nigeria, Egypt, Sudan, and South Africa accounting for the majority (Babatunde & Martinetti, 2010). '*Remittances are non-reciprocal transfers of money from an individual or household in one place to another individual or household in another place (Hougaard, 2008, 9; ibid., cited in Cooper and Esser, 2018).*

The amount of money sent by international migrants to their families and relatives at the place of origin has increased since the 1990s. It increased from USD 30 billion in 1990 to USD 325billion in 2010, (World Bank,2011;(Foad et al., 2015;Leon-gonzalez, 2012). According to Ebadi et al., in some countries households at the place of origin use remittance as coping strategy that help them to reduce poverty, alleviate hunger, improves their diets, and give them an opportunity to spend on productive investments.(Ebadi et al., 2018) In the locations under consideration, the factors which have an impact on family members who move to RSA is in pursuit of better employment opportunities and financial gain. These components are classified as socio-economic elements; examples include living circumstances, which include poverty, inadequate work opportunities, deteriorating land preservation, and the geographical makeup of the area. Due to these reasons individuals migrated to different areas and countries. In this study, having the above reasons as it is; peoples migrate to RSA to overcome the mentioned problems of their parents and themselves.

More than 3 million Ethiopians live overseas, with South Africa acting as the country's main south-south migration destination. At the national level, remittances constitute a significant source of foreign cash and contribute to maintaining the macroeconomic balance. The National Bank of Ethiopia reported that official remittances to Ethiopia in 2019 totaled $4.5 billion. This provides 5% more revenue for the country's GDP than the export sector does. According to estimates from

the Ministry of Foreign Affairs, which do not take into account the sizable transfers through illicit means, Ethiopian migrants in South Africa may contribute US$158 million to their home countries each year. Hadiya migrants in RSA only contributed US$200,000 for local development projects in Ethiopia in fund raising event (Meron, et al, 2020)

1.2. Statement of the Problem

Migration, whether domestic or international, is connected to remittances. International migration is one of the biggest difficulties and concerns of the twenty-first century, as evidenced by the prominence of the topic on the global agenda. Nearly 175 million individuals moved abroad between 1991 and 2000, an increase of 14% in international migration. These numbers are expected to rise by 230 million in 2050 (Thouez et al., 2004). Most migrants who move from less developed to more developed nations do so in pursuit of possibilities they do not afford in their home country. 2.4 million migrants travel annually from less developed nations to more developed regions of the world. More than 60% of immigrants from other countries reside in high-income nations.(Thouez et al., 2004) According to estimates, there will be over 272 million foreign migrants in the globe in 2019. It represents close to 3.5% of the world's population.(Foad et al., 2015)

Remittances sent and received internationally are one of the anticipated effects of migration. In this instance, the three nations with the highest migrant populations were also the ones that received the most remittance. Mexico received USD 35.7 billion, China USD 67.4 billion, and India USD 78.6 billion. According to these statistics, the United States was the largest sender of remittances in the world with USD 68.0 billion, followed by the United Arab Emirates with USD 44.4 billion and Saudi Arabia with USD 36.1 billion.(Foad et al., 2015) Africa as a continent origin of international migrants, from the year 2000 to 2019, there were increments of international migration. Statistically, it increased from 15.1million to 26.6million, almost 76 per cent increase.(IOM & AU, 2020b) These days, from the total population of Africa 2 per cents are international migrants, which is less than the global 3.5 per cent.(Foad et al., 2015; IOM & AU, 2020a)

Ethiopia is confronted with a variety of migratory patterns and processes, many of which have important political and socioeconomic implications (IOM, 2008a). Several things have been

mentioned about Ethiopian ladies migrating to Middle Eastern nations (Abdu, 2009; Girum, 2010), but less has been said about young adult Ethiopians migrating irregularly to the "dream land"—the Republic of South Africa (RSA). The majority of young folks who relocate to the RSA are employed and are pursuing their ambition of seizing the green pasture there. In Ethiopia, the issue is particularly prevalent in two southern zones, notably Hadiya and Kambata-Tambaro. Most young adults who go irregularly to RSA have experienced a variety of issues, including being smuggled, physical abuse, human rights violations (including death in some cases), and robbery while returns fare better (Teshome D. Kanko , Ajay Bailey, 2013).

Remittances are used for different purposes in rural households in Hadiya zone Misha woreda rural kebeles selected for this study. The inflow of money from internationally migrated family member (IMFM) back to their families at the point of origin (FPO) is an important source of income as in many developing economies. The recipients use the remittances to cover different expenses, to provide a protection from impact against emergencies or shocks, covering their food expense or, in some cases they invest as startup capital for small businesses. A large percentage of Ethiopians have been experiencing both persistent and temporary food poverty. The characteristics of chronically food insecure people in the country are more severe. Food insecurity situation of Ethiopia is related with recurring food shortage, and famine, associated with drought occurring time and again in different interval. Hadiya zone is also one of the areas affected by chronic and transitory food insecurity situation. The selected kebeles in this study have a shortage of arable land. The form of the farmland in the selected kebeles is dominantly plateau and sloppy. In the case of plateau type land, it is flat and elevated landform that rises sharply above the surrounding area on at least one side. Sloppy farmland is opposite to the plateau form of land, and it is difficult to cultivate unless different conservation mechanisms are done. In both cases it is difficult to cultivate and increase yield to overcome the challenge of food insecurity. So, these kebeles are vulnerable to food insecurity. Many individuals from Hadiya zone migrate to RSA to improve the life of their parents and relatives in sending back the amount of money in the form of remittances.

Many studies were conducted by different scholars in relation to international migration from Ethiopia to RSA (Adugna, 2019; Estifanos & Zack, 2019; Girmachew, 2014; Kuschminder et al., 2018). Several studies have examined the effect of remittances on economic growth, poverty reduction,

education, and governance, among other factors, in developing countries with inconclusive results (Larsson, 2014). As mentioned above in theoretical and empirical literature reviewed, it can be understood that most of the study focused on the migration and the challenges related with migrating people, human traffickers, and smugglers. Even though remittance has got growing focus in recipient's households and countries at large, it is less directly related with food security issues. They have studied the root cause of international migration from hadiya zone (selected kebeles) to RSA, pushing and pulling factors, the challenges the migrant faced through all their journey, and the community (at the place of origin) perception. Since the international migration to RSA was started in Ethiopia; particularly in hadiya zone, there are limitations in researchers carried out in this study topic. So, this study was conducted to fill the knowledge gap answering the contribution of remittance on food security of rural households specifically in the study area.
In other words, it is an underdeveloped research and policy area in the selected rural kebeles. This study investigates the contribution of remittance on food security situation in the place of origin, which is Hadiya zone, Misha woreda selected rural kebeles.

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of this study is to investigate how remittances in three rural kebeles in the Misha woreda, Hadiya zone, affect rural households' food security situation in Dilbara-Mago, Gunna-Bonochora, and Siko kebeles. In order to achieve this objective, the study addresses the following specific objectives:

1.3.2. Specific Objectives

The specific objective of the study includes:

i. To investigate the underlying economic and non-economic reasons for international migration from Hadyia zone;
ii. To explore the way of remittance inflows and its utilization recipient families left behind;
iii. To assess the impact of remittance with emphasis on food security situation of the study area;

iv. To explore the difference of food security between rural households receiving remittance and non-recipients;

1.4. Research Questions

This study sought to answer the following important inquiries, which are extensions of the research objective stated above: In order to address the underlying objective of the study, this research has come up with the following five research questions:

The research questions are

i. What is the food security/insecurity situation of Dilbara-mago, Gunna-bonochora, and Siko kebeles?
ii. What are the coping mechanisms of food insecurity in Dilbara-mago, Gunna-bonochora, and Siko kebeles?
iii. Why people migrate to RSA from Dilbara-mago, Gunna-bonochora, and Siko kebeles (pushing/puling factors)?
iv. How often remittances sent to families at the point of origin from internationally migrated family members?
v. What are the major improvements of the life of remittance receiving households in terms of food security
vi. What is the major difference between remittance –recipient households and non-receiving households in the study kebeles?

1.5. Scope and Limitation of the Study

Even though the concern of the study is the contribution of remittance for food security situation of rural households in Hadiya zone, Misha woreda, this study has limited spatial scope i.e., only three kebeles in mentioned Woreda of Hadiya zone. The study considers remittance recipient and non-recipient households from each kebeles. This study was limited to identifying factors that determine households send their family members to RSA in the three rural study kebeles. The contribution of remittance in rural household's food security situation was studied in three representatives kebeles by surveying a sample of 391 households. The author believed that the results of the study would contribute the efforts to improve the implementation of the ongoing food

security work in Ethiopia. The study, therefore, fills the gap in the existing knowledge in relation to the contribution of remittance for food security status of study kebeles thereby provides new information in the study of food security in relation to international migration and remittance in Ethiopia. Nevertheless, the result of this study was used as a reference for other similar areas. Methodologically, this study used cross-sectional data gathered from sample households as well as the variables included were focused on socioeconomic, institutional and demographic related factors. Additionally, the study was limited to applying econometric models to examine the effects of international remittance in rural household food security and to analyze factors affecting household receiving remittance. The model uses data from non-recipient of remittance in order to compare some outcome variables with the result of remittance recipient households. However, it can be difficult to find a comparison group (and often an observable) determination and ability that lead the households to send their family member to RSA. Therefore, the study was undertaken to meet its objectives within the limitations mentioned.

1.6. Data validity and reliability

Ensuring the reliability and validity measurements are necessary for the detailed analysis and conclusion of research results. The degree to which one may have confidence in the information acquired from using a tool is known as reliability (Richard P. Bagozzi, 2017). Validity reveals how well the data is representative of the subject under examination. The degree to which a measurement of a phenomena yields a steady and consistent result is what reliability refers to (Taherdoost, 2018). To affirm the validity and reliability of the result the author employed quantitative and qualitative research methods. To make a clear understanding and increase the validity of the survey, the collected data were compared with other sources of information, particularly by interviewing the respondents of the selected kebeles and administrative offices in each kebele.

Basically, families of those who have received remittance from RSA and household those who are not received remittance are clearly identified through the involvement of their kebele admiration officers. The second step was collecting data through a questionnaire. The questionnaire was collected from both remittance receiving and not receiving households at the same time

communicating the household head or responsible person in the household. Focus group discussion also conducted in two groups. The author planned three FGD but exuded only two. The first two FGD are almost similar, and the issues raised in both discussions are the same in content wise. So, the author decides to communicate with the kebele administrators and get information from them. It was also similar to the above discussions and some individual interviews in its content. To achieve the issue of the reliability of data collection tools and their accuracy in this study, pilot tests were conducted in randomly selected household from the three kebeles.

1.7. Ethical Consideration

The privacy and confidentiality of the respondents, as well as their identities, was secured throughout the data collection, processing, and reporting processes. The author was formally requested consent before taking any photographs of respondents' human components for the data gathering. Respondents signed a permission form if pictures are utilized in the research procedure. The study's protocol was guided by the do no harm, respect for privacy, and informed consent principles.

1.8. Significance of the Study

The outcomes of this study will be beneficial in a variety of contexts. First, it gives background information on remittances in relation to issues of international migration and food security in FPO and acts as a launching pad for other researchers who are interested in conducting additional research in the area. Second, the study was done in a region that is more susceptible to international migration; the outcome serves as a basis for zone, regional, and federal planning, policy development, and program implementation. This study also provides recommendations to agencies that directly or indirectly deal with the subject of international migration and its contribution of on food security situation of FPO.

This study will especially benefit people who have IMFM to the RSA and their FPO by assisting to improve their general quality of life and to utilize the remittance in organized and planned manner. It will ignite advocacy to voice for internationally refugee family members and FPO so that the GoE and any other responsible local and international organizations act in relation to change the

life of both IMFM and FPO in well organized and sustainable manner. The GoE and any other development partners will use the research findings to design compatible for the purpose interventions of enabling both IMFM and FPO to use the resource (the remittance) wisely and properly to change their livelihood sustainably. Finally, the results of this study can also contribute to building knowledge base for academic and research community.

1.9. Organization of the thesis

The overall organization of this thesis consists of five chapters. Background of the study, statement of the problem, objectives and research questions, significance of the study, scope and limitation of the study are constituted under chapter one. This chapter provides with the general introduction of the paper. Chapter Two focuses on review of related literatures. Relevant theories, concepts and empirical literature are reviewed and discussed under this chapter. Methodological issues like, description of the study area, research design, sampling technique and sample size determination, the data source and collection mechanisms, and data analysis methods are discussed under chapter three. The fourth chapter presents clear discussions and analysis of the findings based on the proposed methods. Ultimately, the fifth chapter comes up with conclusion and recommendation based on the findings/results of the study in above chapters.

CHAPTER TWO: REVIEW OF RELATED LITERATURE AND CONCEPTUAL FRAMWORK

2.1. Related Literature Review

This section reviews previous empirical studies, which mostly focus on the direct impact of remittances on rural household food security situation. Several theoretical and empirical studies analyze the impact of remittances on macroeconomic variables, such as consumption, investment and growth in recipient countries, yet the results of these studies remain largely inconclusive. In this section, an attempt is made to briefly describe some of the contemporary writings of international migrations and its outcome (remittance) particularly on issue related to the impact of remittance on food security of rural households. Major theories, determinants and patterns were reviewed. In view of the scanty studies conducted in the field, effort is made to review only the most relevant literature, which will later serve as springboard to develop the research questions and objectives of the study.

2.1.1. Concepts and Definitions

2.1.1.1. Food Security

The concept and definition of food security is not uniformly articulated throughout the world. Because its nature is more interdisciplinary and multi-sectoral. There exist several definitions and explanations of the concept of food security. As evidenced by the numerous attempts made to define it in research and policy applications, food security is a flexible notion. The early 1970s saw several worldwide food crises, which is when the idea of food security first emerged. Even in published publications from two decades ago, there were around 200 definitions of food security, demonstrating the definition's contextually sensitive characteristics (Maxwell and Smith, 1992). The Food and Agriculture Organization's (FAO) "The State of Food Insecurity in the World 2011" annual report on food security is where the term "food security" is currently understood to mean:

Food security [is] a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2002). A fourth component, stability, was added to this definition at the 2009 World Summit of Food Security as a short-term time indicator of the capacity of food systems to endure shocks, whether natural or man-made (FAO, 2009). This definition contains four main elements. Such as: - availability, access, utilization, and stability. Since this is current time explanation, most of the ideas and elements are similar with that of FAO which is "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life". (World Food Summit, 1996; (Peng & Berry, 2018) This definition is widely accepted and well defines the dimension of food security. The well-organized dimensions of food security in this definition are food availability, food access, utilization, and stability.

The fulfillment of these dimensions is the main challenge in the household, community and country level in the world. People try to get food in different ways to achieve their food needs. The situation of food insecurity is everywhere throughout the world, but the degree of severity differs from place to place and country to country. Likewise, coping strategies of the country's also different in the world to get their food needs. The common phenomenon in the world is the movement (migration) of people from rural to urban and country to country for different reasons. The main reasons are in search of good opportunity to get job and income to improve their own and their parent's livelihood.

2.1.1.2. Migration

In order to find better living conditions, people may migrate from one area of a state or country to another, either temporarily or permanently. Economic factors, business prospects, options for education, and jobs account for the majority of migrations. Migration (internal (domestic) and/or international) is often a direct response to environmental degradation and rural poverty. Studies of the demographic consequences of environmental degradation and food insecurity have been conducted by several demographers(Ezra, 2001), discusses the link between social organization and ecological stability on the one hand and demographic stress on the other; he finds that where social organization and institutional factor are weak, demographic stress causes ecological instability

(Lipton, 1989), analyzes the response of rural populations to the increasing problem of land scarcity in terms of agricultural technology, employment, and demographic behavior and stated that demographic behavioral change, although slow, contributes to the transition to lower fertility. These changes include postponement of marriages, reduction in fertility, and migration for change of occupation. In his study of the demographic responses to drought and food crisis in the Sahel in the mid-1980s, Hill (1989) asserts that the main individual, household, and community strategy for coping with drought was out-migration. Migration may be viewed as part of a household coping strategy even during non-drought years, whereby a family allocates part of its labor for non-farm work (including seasonal out –migration). They migrate in an irregular manner and cross borders in most distant in any direction towards their dream land. They are also obliged to pass life threatening terrains in order to make their journey by the guidance of smugglers. There are also some related important concepts in relation to migration that should understand.

Types of migration:

Before going to the concepts of migration it is better to present the two-aspect related to migration. Such as: Emigration: Leaving one country to move to another and Immigration: Moving into a new country. Having this understanding of the two terms, the following presentations are the main types of migration.

i. **Internal Migration:** refers to a change of residence within national boundaries, such as between states, provinces, cities, or municipalities. An internal migrant is someone who moves to a different administrative territory

ii. **International Migration (IM):** Based on its nature, International Migration has several definitions focusing on points. For instance, the UN considers IM as a demographic physical process. *"… the UN (1998, 9-10) defines an international migrant with space and time elements as a person who moves a country other than that of his or her usual resident for a period of at least a year (12 months)"*(Moreno, 2017; The World Bank, 2016). According to UN-DESAPDMS, "*An international migrant who changes his or her place of usual residence for at least one year is defined as a long-term migrant, while a person who changes his or her place of usual residence for more than three months but less than one year is defined as a short-term migrant."*(United Nations, 2012) There are two concepts used to measure international migration level- Migrant Stock and Migration flow.(United Nations, 2012)

iii. **Return Migration**: When groups of people move back to where they come from.

iv. **Seasonal Migration**: When people move with each season (e.g., farm workers following crop harvests or working in cities off - season).

v. **Rural - Urban Migration:** It is usually an interregional migration with a specific origin that is from the country sides or rural areas to a specific destination which is the urban areas of the country. The purpose is usually to find a greener pasture or to find better opportunities to make money (B. A. Part-III-SOCIOLOGY Paper-VIII-A (Social Demography), n.d.).

Points listed as rural to urban migration are urbanization, marriage, employment, lack of security, environmental and disaster- induced factors. Based on the above source, Due to natural disasters like drought, floods, heat waves, etc. that may have devastated their houses and farms, some migrants are compelled to relocate from rural to urban areas or from one country to another.

There are push and pull factors to migration. Some of them are

Political factor: There are several political issues that cause people to move to other countries.

Economic Factors: limited job opportunities and unemployment are some of the push factors contributing to migration in developing countries.

Social factor: one of the factors that attract migrants to a particular place is the availability of welfare benefits. This scenario encourages migration mostly among less-educated migrants, who are more than 25 years of age. They are likely to move to older European Union (EN) member states depending on how high the welfare benefits are. Hence, the rare of migration to a particular country is dependent on the average income and the social benefits provided in that country, so long it is greater than in tier home countries. RSA, in comparison to the other countries or the continent, has good social services that attract people. For example, children of refugees receive social grant and if you have four or five children, you can receive enough money to afford your rent (Kanayo et al., 2019).

There are some terms related to migration

Migrant Stock (MS): - the total number of international migrants present in a given country at a particular point in time who have ever changed their country of usual residents.

Migration Flows (MFs): - refer to the number of international migrants either arriving in a country or departing from a country over a specific period.

In general, the need, desire, and decision of individuals to leave their home country in search of better living conditions is known as voluntary migration. The causes of voluntary movement are varied and have changed throughout time (including labor migration, skilled migration, and the migration of students, retirees, and celebrities).

Forced migration is characterized by external factors, such as protracted wars or other armed conflicts, political and social unrest, and natural or other calamities, that compel people to leave their home countries (Goularas & Turkan-İpek, n.d.).

2.1.1.3. Smuggling

When a person voluntarily engages into an agreement with a smuggler to gain unauthorized entry into a foreign country and is transported across an international border, this is known as migrant smuggling. It is described in the Migrant Smuggling Protocol, an addendum to the UN Convention against Transnational Organized Crime, which prohibits the smuggling of migrants by land, sea, and air. Although in some places it can also involve transportation and harboring once in the destination country, migrant smuggling frequently entails obtaining phony documents and passage across a country's border. Once the migrant has crossed the border and the smuggler has received full payment, the transaction between the migrant and the smuggler is usually considered to be complete. The migrant has given his or her agreement to being transported. However, as they are illegally present in the country of destination and frequently have significant obligations to their smugglers, those who are smuggled can be particularly exposed to human trafficking, abuse, and other crimes. Some smuggled immigrants avoid violence in their home countries, while others just seek better lifestyles, more chances for employment, or to be reunited with family members who have moved away. Some smuggled people could become victims of sex or labor trafficking while traveling or once they get at their destination. But not all incidents of smuggling involve human trafficking, and not all instances of that crime start with migrant smuggling. (Human Trafficking, 2017)

According to Article 3 of the Migrant Smuggling Protocol defines migrant smuggling as: "...the procurement, in order to obtain, directly or indirectly, a financial or other material benefit, of the illegal entry of a person into a state party of which the person is not a national." (Water et al., 2011; UN, 2000, p.2) Smuggling is done by sea, land and air.

2.1.1.4. International Migration from Hadyia Zone Ethiopia

Labour time is thus allocated to diverse income-earning activities, including farming the family's own land and long-term or seasonal agricultural or nonagricultural employment elsewhere. Many Ethiopians [from Hadiya Zone] migrate to Republic of South Africa aiming to solve the political and economic challenges in the area of origin. Most of them settle in large cities and comparatively some of them settle and work in rural towns and villages as entrepreneurs in RSA. The distance between Ethiopia and RSA is 4,777km to the south of Ethiopia. Migrant's cross multiple African nations using several routes that involve various kinds of transportation, including air, ocean, and land. Some people fly directly from Addis Abeba to Johannesburg, while the majority travel through transit nations by bus and on foot. Still others cross the Indian Ocean by boat. The typical land route connecting Ethiopia with South Africa begins in Kenya and travels through Tanzania, Malawi, Mozambique, and Zimbabwe before arriving in South Africa. This lengthy trek is dangerous. Despite coming from all around the nation, the majority of Ethiopian migrants in South Africa are from the south, particularly the Hadiya-Kembata region. It is anticipated that 61,148 Hadiya youth have immigrated to South Africa from 2013 to 2018 alone, per the Hadiya zone Human Resource and Social Affairs department data. According to a recent survey, at least one member of Hadiya-Kembata households is an international immigrant who has ever left the country. Hadiya is one of the administrative zones in the Federal Democratic Republic of Ethiopia member state of the Southern Nations, Nationalities and Peoples Regional State (SNNPR). Hadiya Zone has a population of 1.23 million people and 3,593 square meters of land. Additionally, a persistent drought that is compounded by the whims of climate change affects the Hadiya region, making farming an unstable source of income. The greater number of recipients of national social protection is evidence of this. the Productive Safety Net Program, among others (Feyissa, n.d.).

2.1.1.5. International Remittance

Remittances are money-transfers, earned by migrants' abroad, sent to individuals in their country of origin (Larsson, 2014). Developing countries give a great consideration for inflow of remittance as one source of income to equalize their regions (Hidayati, 2020). According to UN outcome paper, (2006,4) remittance is '*personal transfers consist of all current transfers in cash or in kind made or received by resident households to or from other non-resident households*.' As it is known, hard currency (internationally circulated currency dollar) is big deal for low-income countries. Raw materials, semi-finished goods, and finished goods are highly imported from high

income countries. Hard currency is the medium of import and export of goods and services in developing countries. The inflow of remittance is one source of income in terms of hard currency. According to FAO, in most case international illegal migrants leave their original area with a plan of changing their life and their family's livelihood. They find work and send back money to support their family back home (FAO et al., 2018).

World Bank (2018) states that, in the year 2017 there were USD 595.7 Billion remittance throughout the world. From this amount more than 75.6 percent or USD 450.1 Billion remittance transferred to low-income and middle-income countries. As compared with the year 2007, remittance increased by more than 50 percent. Currently international remittance account extra 5 percent of GDP for 47 low-income countries (AFI, 2018). According to the above WB document remittance play a great role in lowering the poverty level of the local population who are recipient of remittance. Remittance also helps the people at household level increase their livelihood. It initiates them to make improved houses, to educate their children, and to participate in petty trade and other income generating activities. It also plays a great role in improving the livelihood of the rural households in low-income countries like Ethiopia. There are countries who have received large amounts of remittance in the world. Those countries are India, USD78.6 billion, China, USD 67.4 Billion, and Mexico USD35.7 billion respectively.

This implies that these countries have also many international migrants and they are able to manage the inflow of remittance in a good manner. Their citizens migrated crossing their homeland to other countries have a practice of sending money or materials to their parents at the point of origin. According to the World Bank, developing countries have been taking advantage of remittance increasingly time to time since 1990s. In 2010 a huge amount of remittance was recorded (USD 325Billion). Due to the experience of increasing remittance, low-income countries take as one of important source of income in personal engagement. As one of developing countries, Ethiopia exercising the inflow of remittance from different directions of high-income countries like US. As WB ranking in 2010 Ethiopia is the 8th remittance recipient country in sub-Saharan Africa. The amount of money received in that particular year was USD387million.(The World Bank, 2011) In 2015 Ethiopia receive 635million USD remittance (The World Bank, 2016, p. 119).

Remittances have a detrimental impact on economic growth in Bangladesh, Pakistan, and Sri Lanka, according to the empirical research. Remittances, on the other hand, benefit India's economic expansion. This study also reveals that remittances and economic growth in four nations have a combined substantial and adverse association.(Sutradhar, 2020) Most of the time, instead of being invested productively, this money is utilized for consumption.(Hassan & Shakur, 2017) The altruistic purpose of remittances is implied by the negative correlation between remittances and economic growth, whereas the positive correlation indicates the productive drive.

Remittance has good effects on education and health outcomes, and it has been shown to support human capital development particularly in children (Gupta and Pattillo, 2009; Hassan, et al., 2017; Africa, 2018) In the other side scholars' question about the remittance perception and the issue that remittance or income make development. According to Amartya Sen, income is not the priority for development. Social well-being, poverty alleviation, economic disparity, gender equality, and universal access to basic education, health care, and meaningful work are all part of his indicators of development. He suggested that economic growth should not be used as a criterion for progress (AMARTYA SEN (with Jean Dreze), n.d., pp. 3–4). As perceived income is the key to development and improving of livelihood for human being, but rather the question of whether people's capacities to govern their own livelihood. The link between income and human growth is not direct or automatic, hence income is important. Income indicators alone are insufficient to assess the quality of people's lives. He claimed that liberty is a good thing (Clapp & Sen, 1999; FAO, IFAD, UNICEF, 2021).

Remittances have recently increased significantly in low-income nations. However, the effects on economic growth are characterized differently by various academics in different nations. The supporter of the contribution of remittance concurred that remittances benefit the countries receiving them by lowering poverty and promoting economic expansion. However, in the opinion of pessimists, remittances shouldn't promote economic growth; rather, they should slow it down by making remittance-receiving nations more dependent on foreign aid and encouraging excessive spending (Tassew, and Rao, 2009).

2.1.1.6. Impacts of Remittance on FS

Philippines discovered that remittances led to an improvement in recipient households' food security as well as a considerable shift in food consumption patterns. Jimenez (2009) compared remittance-receiving countries with non-remittance-receiving countries. In the Mexico community of Tlapanala, there are remittance receiving homes and non-receiving households, but food consumption habits do not change considerably, according to the data, Similarly, Quartey and Blankson (2004) found evidence of higher food utilization among remittance-receiving households in their study of Ghana.(Abadi et al., 2018a) In all cases the importance of remittance is not denied, rather it needs managed in well organized and making at the center the freedom of individuals to make their own decision and control their own life.

According to our empirical results, the extent of cross-sectoral ties affects how remittances affect recipient economies, and this is particularly true for the financial intermediation industry (Perez-Saiz et al., 2019). The positive impact of remittance on the recipient household gets great emphasis. As stated in the above document the financial institutions also benefited from the transaction of remittance if the case is formal transfer. Most people transfer remittances using informal, channels like Hundi and Hawala to cut the cost of sending them. Remittance inflow is positively correlated with political stability and improved governmental regulations (Abbas et al., 2017). The two main avenues used by people to transfer money are official and informal. Financial channels including banks, postal services, money transfer companies, and other wire transfer services are subject to government regulation and rules. These channels are typically linked to expensive transaction fees and exchange loss. The unofficial method used to transfer money to Bangladesh is called hundi. Pakistan has the Hundi and Hawala systems, whereas India is familiar with the Hawala system. Even though Hundi is casual, it is organized and consists of a network of ties between friends, family, and the local community (Rahman & Yeoh, 2008). The migrants from Sri Lanka find the informal route Hawala more appealing than other official channels due to its favorable price and quickness (Maimbo et al., 2005).

2.1.1.7. Remittance in Ethiopia

The study by Legesse (2015) demonstrated that the circumstances of migrant sending families as well as the migration scenario are the main determinants of the large or sustained development benefits of migration and remittances. The social, economic, and environmental aspects of

sustainable development have become more and more relevant to migration, as well as how it affects the study area (Gohatsion town). The report recommended that decision-makers create development plans that clearly incorporate migration policy within a larger framework for economic and social growth.(Legesse, 2015) The results show that while remittances had a long-term beneficial impact on growth rate, they had a short-term negative impact. The research also showed that while trade openness had a negative short-term impact; it had a beneficial long-term impact. Contrarily, real private investment influenced real growth favorably both over the long and short terms. On the other hand, investing in human capital has little impact on actual growth. The government should therefore develop appropriate policies that result in the efficient use of resources contributing to economic growth by increasing the remittance flow and proper management of variables that could contribute to national output in order to sustain long-term growth in addition to working on remittance and human capital.(Abel, 2019)

According to National Bank of Ethiopia, *"International Remittance Transfer by Nationals means monetary transfers that overseas Ethiopians and foreign nationals of Ethiopian origin make money transfers to their home country through Remittance Service Providers (RSPs)."*[2] The Ethiopian Diaspora Agency (EDA) said that during the fiscal year 2020-21, which concluded on July 7, 2021, Ethiopians residing abroad sent home a total of 3.6billion US dollars. The EDAs officer said that the agency's efforts to persuade Ethiopians living overseas to donate money through legitimate channels had been successful. However, the amount is still less than the 4billion plan of the agency set for the time frame. Authorities concur that the sum is inadequate considering Ethiopia's sizable diaspora overseas. In order to direct more hard cash through the legal way, Selamawit Dawit, the director general of EDA, said in an interview that "we are pushing the diaspora to use technology-based money transfer platforms and participate in business, real estate, and other multi-stakeholder ventures."[3]

Empirical study discovers that receiving foreign remittances has a detrimental effect on Ethiopian adults' decisions to participate in the labor force and their hours worked (Ademe & Mohanty, 2022). Remittances can decrease the work force and foster a culture of reliance, both of which hinder

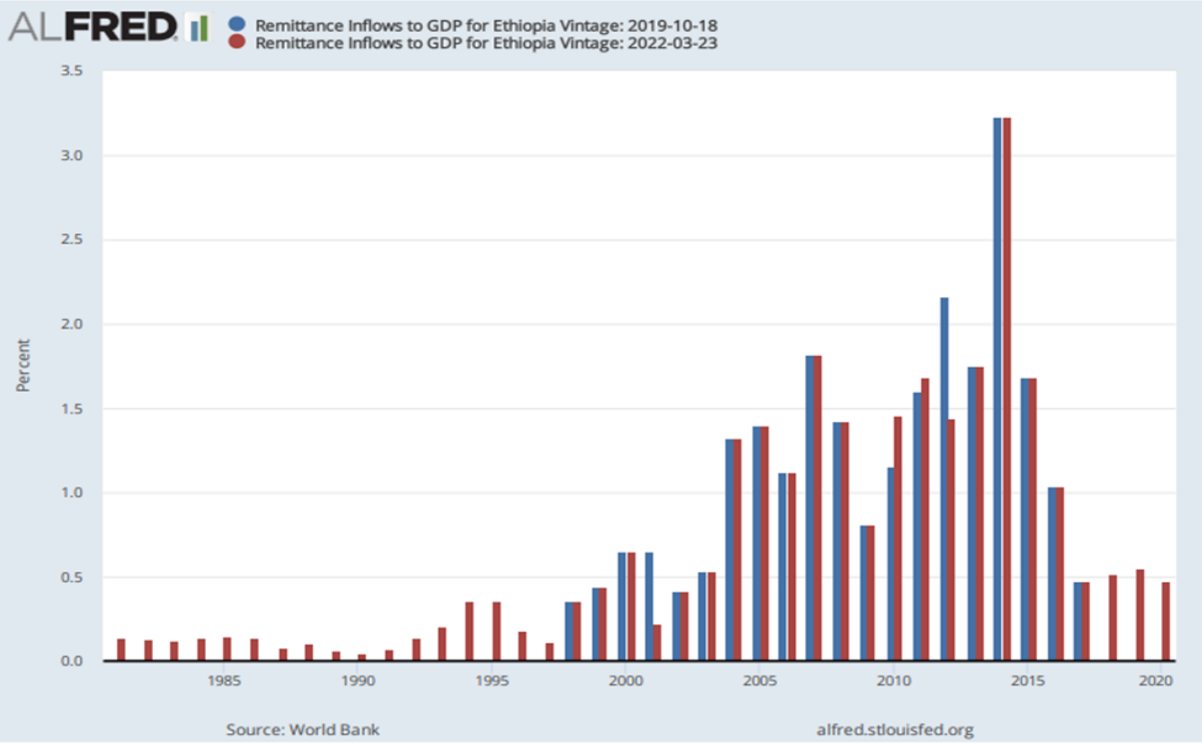
[2] https://nbe.gov.et/remittance-service/ Accessed on Monday, October 10, 2022 @3:38PM
[3] https://www.ena.et/web/eng/w/en_26511 Accessed on Monday, October 10,2022

economic expansion. Remittances can harm a country's ability to compete internationally by raising the consumption of non-tradable commodities, increasing their costs, strengthening the real currency rate, and reducing exports. Increased anti-immigrant sentiment and stricter enforcement measures in host nations, such as the US and several in Europe and the Gulf area, can reduce remittances as well as global migration (Amuedo-Dorantes, 2014). This detrimental effect may lead to moral hazard in recipient homes, which would reduce the labor pool. Remittances do not adequately encourage profitable investments, which is another factor. Remittances have a significant impact on aggregate supply, which includes the growth of the service and construction industries. Last but not least, remittances can trigger the Dutch disease because they raise the effective exchange rate, which changes the non-tradable segment of the economy (Karapetyan & Harutyunyan, 2013).

The Director General asked the Diasporas to avoid using the black market and instead transfer hard cash through authorized means, just as they did while contributing to the building of the Grand Renaissance Dam (GERD). She also emphasized that "the issue requires effective interventions, like the one we used in the (#ItsMyDAm) campaign, and boosting the accessibility of diaspora investment projects, local bank remittance accounts, and similar activities is also something worth equal attention,". The director-general further emphasized that during the reporting period, businesspeople from the diaspora established investment and commercial initiatives totaling 37.8 billion birr. According to her, at least 84 investments totaling 3.9 billion Birr in capital have started operating in Addis Ababa, Amhara, Oromia, and other regional states, creating 13,000 jobs for young people.[4] This above discussion is focused on the formal and well-known transfer of remittance inflow only. There is also a great amount of remittance transferred to the family at the place of origin. In both formal and informal ways, remittance recipients use the amount of money to different expenditures, basically for food expenditures of the household.

[4] https://ethiopianmonitor.com/2021/08/07/ethiopians-in-diaspora-sent-home-3-6-billion-in-2020-21fy/ Accessed on Thursday October 27, 2022 @8:05pm

Figure 2.1: Remittance inflows to GDP of Ethiopia



Source: World Bank, 2022[5]

According to the above figure, the contribution of remittance to the GDP of Ethiopia was 0.46865 percent in the year 2020. It decreased as compared with 2014 contribution 3.23018. This implies that there were reasons to decrease the inflow of remittance to the country. One of the main reasons taken into consideration is informal way of sending money. The civil war and the corona vinous pandemic were also taken as the contributing factor to the decreasing of remittance. In

[5] https://alfred.stlouisfed.org/series?seid=DDOI11ETA156NWDB&utm_source=series_page&utm_medium=related_content&utm_term=related_resources&utm_campaign=alfred Accessed on Saturday October 22, 2022 @12:04pm

2020, Ethiopia's remittance inflow to GDP was estimated to be 0.37535% by the World Bank's collection of development indicators, which was put together from verified sources. The World Bank provided the actual numbers, historical statistics, estimates, and predictions for Ethiopia's remittance inflows to GDP in November 2022. Remittance inflows are categorized in to two formally through the financial institutions of the country and the second is informal ways which is without using the financial institutions of the land.

"Informal inflows into the country are estimated to be as high as 78% in some corridors (Isaacs, 2017). They mainly involve sending cash with family and friends or happen on the back of trade payments that are offset without money ever crossing borders" (Africa, 2018).

According to IOM executive summary paper, the high degree of informal transfers of remittance is mostly caused by the absence of services in the sending and receiving markets, high direct and indirect expenses associated with official channels, irregular migration, the availability of parallel market exchange rates, and regulatory restrictions for illegal migrants. In addition to costing the Ethiopian government money in terms of foreign exchange, informal flows also make it difficult to promote investment, put consumers at risk, and prevent the government from monitoring flows for AML/CFT (anti-money laundering and countering the financing of terrorism) purposes (Isaacs, 2017). According to the same document, 78% of all remittances in some corridors are sent through unofficial or in informal methods.

2.1.1.8. Remittance and Food security

It is believed that the rural households get extra income; they try to improve their dietary issues. Those households who get remittance access increase some additional food to cover their need. As they get money from one or more IMFM, the use the balance of the money to pay their food expenditures. Remittance also helps households to cop-up the immediate needs and also to engaged into some petty trade and invests to the future.

In order to meet the Sustainable Development Goals (SDGs) deadline of 2030, Sub-Saharan Africa (SSA) has made some progress in lowering the percentage of its population that experiences food insecurity. According to estimates from the State of Food Insecurity in the World (FAO, 2016), there was a global drop in hunger of 31% between the base period (1990–1992) and 2015. SSA continues to be the region of the world with the highest prevalence and persistence of food

insecurity through the lenses of "hunger experience" despite this remarkable development, which may still be regarded as unsatisfactory (Liu et al., 2008; Shah, Fischer, & van Velthuizen, 2008; Mohammed & Uraguchi, 2013). According to a recent FAO estimate, "153 million people, or nearly 26% of the population in Sub-Saharan Africa over the age of 15, suffered from acute food insecurity in 2014/15. As a result of a lack of funds or other resources, one out of every four people in the region over the age of 15 was, on average, "hungry but did not eat or went without eating for a whole day" (FAO, 2016).

A threat to human growth, social harmony, health, and ultimately the region's overall economic development is posed by the effects of food insecurity and malnutrition (World Bank, 2006; Ogunniyi, Olagunju, Kabir, & Adeyemi, 2016; Upton, Cisse & Barrett, 2016). In order to improve food and nutrition security in the region, urgent efforts must be made to establish and encourage supportive policy environments (FAO, 2016). Remittances from abroad have significantly increased in the SSA area, where they now account for a sizable portion of capital inflows relative to other external flows (World Bank, 2016). The inflow of remittances in SSA has outpaced other forms of foreign financing, such as portfolio equity and Official Development Assistance (ODA), and it was viewed as the most reliable source of external money in 2015 (African Economic Outlook, 2016). The consistent rise in remittances to SSA indicated the recent resurgence of interest in this kind of external financing among policy analysts, decision-makers, and scholars. Research on the effects of remittances on household well-being, food security, and economic growth has yielded conflicting results. Williams, Paudel, and Pandit (2013), Lim & Basnet (2017), Adams and Page (2005), Banga and Sahu (2010), Williams, Paudel, and Page (2013), and Lim & Basnet (2017) all make the case for the importance of remittances in raising household incomes in low-income economies.

Developmental countries' rural and resource-poor communities are disproportionately affected by remittances (Adams & Page, 2005; Thieme & Wyss, 2005 & Ratha, 2003) found a similar relationship between remittances and economic growth via the investment multiplier. Remittances have a favorable and significant impact on calorie consumption in Kwara state, Nigeria, according to Babatunde and Martinetti (2010), but they have no impact on dietary quality, micronutrient status, or child nutritional status. While this is going on, studies by Ahamada and Coulibaly

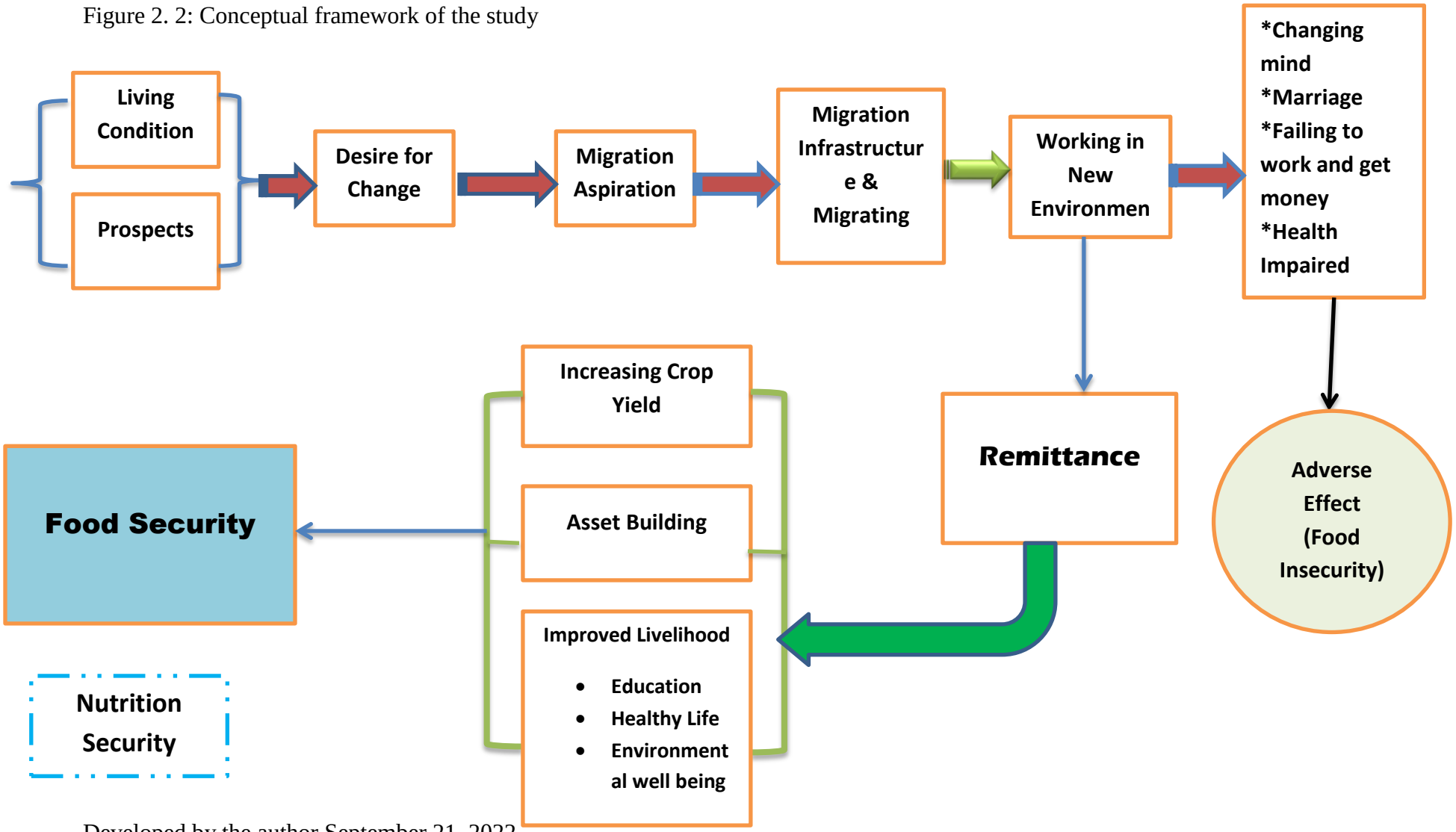
(2013), Zuniga (2011), and Chami, Fullenkamp, and Jahjah (2003) all make the case that remittances increase food price inflation and lower labor market participation, making it harder for poorer households and possibly households that do not receive remittances to afford food.

2.2. Conceptual Framework

To assess the impact of remittance on food security on rural households, literatures indicated different variables. These are family aspiration to migration, personal aspiration, the opportunity of migrant in destination country, the source of payment to smugglers or traffickers, and the amount or remittance sent to family at the point of origin. In some cases, migrants change their mind and maintain their own destiny. In this case the family may get into another scenario. Therefore, the following framework was used to analyze factors affecting food security of selected study area. As shown in Figure 2.2 below, several factors influence household members to migrate to RSA in search of better work opportunities and getting money. These factors are classified as socio-economic factors; like living conditions, which is poverty, low employment opportunity, diminished land holding and geographical landscape of the area. After they migrated to a new environment, socio-economic and culture they depend on the formerly migrated relatives or friends. They get enough understanding of the area they start their own business, and they start to send money for their family members at the place of origin.

The recipient of the remittance utilizes the amount of money in different aspects. Some families are expending the money for food expenditure, school fee, asset building, and in some cases the use as small business startup capital. In this case it is believed that remittance contributes to ensure the household food security in one or other ways. In the other hand migrants change their mind reaching the hope land. They plan to get married, to accumulate money to open their own business back to their county, and they ignore their parents to help and to send money. The effect on the families at the point of origin is to continue their life as usual. In some case it leads the household to moderate or severe food insecure. It is because the household may rent their land for two or more years to cover the migrant family member movement cost.

Figure 2. 2: Conceptual framework of the study



Developed by the author September 21, 2022

CHAPTER THREE: DISCRIPTION OF THE STUDY AREA AND RESEARCH METHODS

3.1. Description of the Study Area

In Ethiopia's Southern Nations, Nationalities and Peoples Regional State (SNNPRS), Hadiya is one of the zones. It is made up of 11 woredas. One of the primary places for youth migration, both to large metropolitan areas and the Republic of South Africa, is one of the main areas for Ethiopian migrants to South Africa. The most chosen destination for international migrants from Hadiya zone is RSA. Studies show that most young individuals and in some case child and adults migrated to RSA in irregular way. Their journey also follows well-known dangerous route crossing several transit countries by the guide of human traffickers; including Kenya, Tanzania, Malawi, Zimbabwe, Zambia, and Mozambique. Increased number of RSA migrants from Hadiya zone started in early 1990s, when thousands migrated to RSA in search of better economic opportunity and to help back their family and to change the poverty situation of their parents.[6]

Misha woreda is one of the woredas in Hadiya zone of Ethiopia. The woreda contains 22 rural kebeles. Of which Dilbara-Mago, Gunna-bonochora, and Siko kebeles are the selected study kebeles of the woreda. According to Meron, Hadiya zone is characterized by densely populated and landlessness. Usually in average 366 people living in per square, this figure is significantly higher than the national norm of 102.8 people per square kilometer.[7]

3.1.1. Dilbara-Mago Kebele

Dilbara mago is one of the rural *kebeles* found in *Misha woreda*, Hadiya zone. Specifically, Dilbara mago kebele is located 7'40"00N and 37'49"30E. The population density is estimated to be 5425. Agro-climatic condition is categorized as "*Woynadega*" and 0.5 hectare is the average

[6] Meron Zeleke, Heading South: A reflection of Child migration patterns form south Ethiopia **https://www.mideq.org/pt-br/blog/heading-south-reflection-child-migration-patterns-southern-ethiopia/ accessed on September 20, 2021**

[7] Meron Zeleke, Heading South: A reflection of Child migration patterns form south Ethiopia https://www.mideq.org/pt-br/blog/heading-south-reflection-child-migration-patterns-southern-ethiopia/ Accessed on September 20, 2021

land holding per person. The elevation of the area is 2412m A.S.L. The livelihood of the total population is agriculture; specifically, they depend on different types of crop production and livestock herding. The landscape is variety of mountainous and platoon.

(*Owen Survey using: SUNROAD GPS Tracker Barometer Altimeter Compass Weather Forecast Thermometer Barometric Pressure Tester GPS Route Tracking Multifunctional Meter, Device*).

3.1.2. Siko Kebele

Siko is one of the rural kebeles found in Misha woreda Hadiya zone. Specifically, Siko kebele is located 7°24'00"-7°45'00"N and 37°44'00"-38°00'00"E. The population density is estimated to be 8102. Agro-climatic condition is categorized as "*Woynadega*" and 0.5 hectare is the average land holding per person. The elevation of the area is 2570m A.S.L. The livelihood of the total population is agriculture; specifically, they depend on different types of crop production and livestock herding. The landscape is variety of mountainous and platoon.

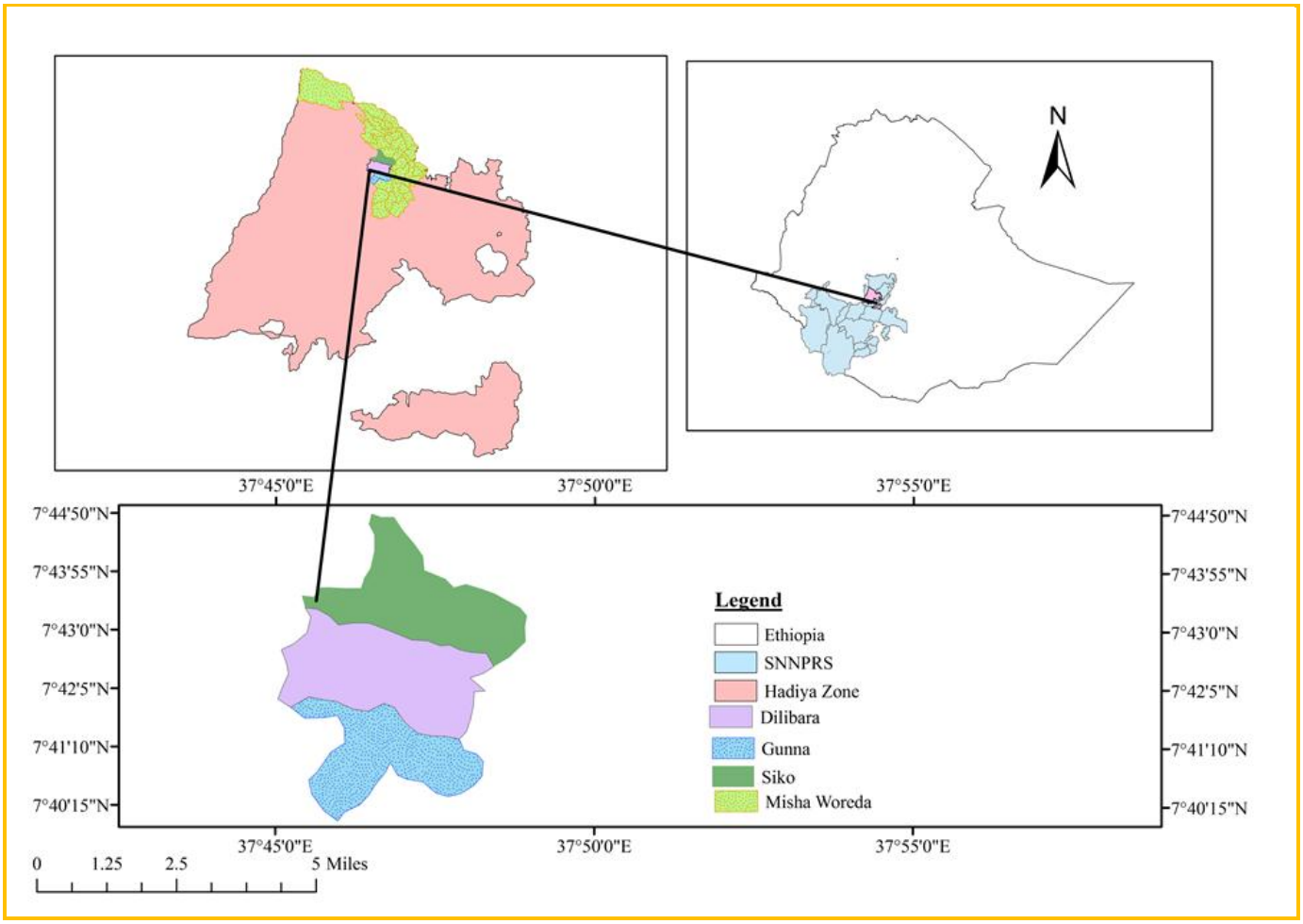
(*Owen Survey using: SUNROAD GPS Tracker Barometer Altimeter Compass Weather Forecast Thermometer Barometric Pressure Tester GPS Route Tracking Multifunctional Meter, Device*).

3.1.3. Gunna bonochora Kebele

Gunna-bonochora is the other rural kebeles found in Misha woreda. Gunna bonochora kebele is in Misha woreda in Hadiya zone. Specifically, Gunna bonochora kebele is located 7°29'03"N and 37°59'11"E. The population density is estimated to be 5623. Agro -climatic condition is categorized as *"Woynadega"* and 0.5 hectare is the average land holding per person. The elevation of the area is 2461m A.S.L. The livelihood of the total population is agriculture; specifically, they depend on different types of crop production and livestock herding. The landscape is a variety of mountainous and platoon. In general, the three kebeles have common characteristics in land holdings, their livelihood, and the landscape. Due to the mountainous and platoon type of land scape, it is difficult to cultivate and increase the yield as other comparatively flat surfaces. The land holdings are also indicating the population density and the landscape is not favorable to cultivation.

(*Owen Survey using: SUNROAD GPS Tracker Barometer Altimeter Compass Weather Forecast Thermometer Barometric Pressure Tester GPS Route Tracking Multifunctional Meter, Device*).

Figure 3.1: Map showing Misha woreda and selected study kebeles



(Source: Developed by the author by the aid of Ethi-GIS, 2021)

3.2. Research Design and approach

This study used cross-sectional research design. The purpose of cross-sectional study design is to get information in one time survey (Sedwick, 2014). According to Pawar, cross sectional study design helps to collect data at a time and it saves cost and time. This study's design, which included a significant number of participants at one moment in time, provided characteristics of the outcomes, and population-based research generates more trustworthy findings (Pawar, 2021). It also saving time and cost to collect data and analyze. In this study mixed research method was employed. In various literatures the mixed approach was used and it is more reliable. In the

behavioral, health, and social sciences, mixed methods research is frequently employed, particularly in interdisciplinary contexts and complicated situational or societal study. To address the study's query, mixed method research incorporates aspects of qualitative and quantitative research. Due to the integration of the advantages of both methods, mixed methods can help obtain more comprehensive image than a standalone quantitative or qualitative research (Creswell, 2012; Edmonds & Kennedy, 2020; Schoonenboom & Johnson,2017).

3.2.1. Qualitative Approach

Employed in order to gain a deep understanding about the impact of remittance on food security of rural household: its main activities, its contribution to improve household's livelihood and root causes of food insecurity condition of remittance receiving households compared with non-remittance receiving households. Semi-structured interviews and focus group discussions were carried out to gather qualitative types of data.

3.2.2. Quantitative Approach

It implies quantifying and observing the relationship between variables through the measurement of quantity or amount. A household survey was conducted as part of a community-based cross-sectional study. It is used to gather information on households' socioeconomic and demographic characteristics, the causes of food insecurity in the study area, and the impact of remittances sent by foreign migrants from the RSA to their families back home when compared with non-receiving households in selected rural kebeles. To evaluate the state of food security for both study categories, HFIAS and CSI were used. In this research, many statistical and economic techniques are used for analysis. Additionally, it analyzes the connection between the variables using correlation and ordered logistic regressions.

3.3. Sampling Technique and Sample Size determination

According to the leaders of the three kebele's, and the information from woreda labor and social affairs office the population of the three kebeles are presented as follows. To decide the sample

size for this study a quantitative approach recommended by Cochran[8] and indicated by Yamane[9] was used as presented below: where n is sample size; N is total number of households in the selected kebeles (Dilbara-Mago, Siko, and Gunna-bonochora); e stands for maximum variability or margin of error 5% (0.05); 1= probability of the event occurring.

Table 3.1: Population of the study Kebeles

S/no.	Name of the Rural Kebele	Population Size		
		Female	**Male**	**Total**
01	Dilbara mago (Dilbara)	2,625	2,800	5,425
02	Gunna bonochora (Gunna)	4,127	3,975	8,102
03	Siko	2,871	2,752	5,623
Total population		**9,623**	**9,527**	**19,150**

Yamane's sample size determination (Yemane, 1967)

$$\mathbf{n} = \frac{\boldsymbol{N}}{(\mathbf{1} + \boldsymbol{N})(\boldsymbol{e^2})}$$

Where, n = the desired sample size; N = total number of population and e = the level of precision or the quality of being care full and accurate which is equal to 0.05.

The population is already known the Yamane's formula is more appropriate to calculate the sample size.

$$\mathrm{n} = \frac{N}{(1+N)(e^2))} = \frac{19{,}150}{(1+19{,}150)(0.05^2))} = \qquad \mathrm{n}=391$$

Using the above formula, the sample size is 391. This sample size was divided into two categories. The first category was the household's receiving remittance and the second were the households not receiving remittance. 391 households were found using the formula for sample size estimation mentioned above. To account for non-response, 5% of (391), or 19.5520,

[8] Melese, Mesfin Alemu, Mebratu, Severity of household food insecurity and coping strategies in Analemmo Woreda , Hadiya Zone , 2021, 16-26 DIO: 10.5897/JDAE2019.1124

[9] Determinants; Food insecurity; Household; Damot Gale Woreda; damot gale woreda; determinants; food insec Woreda; G. (2019). Assessment of food insecurity and its d; 1–11. https://doi.org/10.1186/s40066-019-0254-0uri; household: 2019 DIO 10.1186/s40066-019-0254-0 https://doi.org/10.1186/s40066-019-0254-0

will be added. 20 respondents will therefore act as backup respondents. Thus, a total of 411 individuals are included in the survey.

So, 411÷2…….205+1

Households receiving remittance……206

Households not receiving remittance ……..205

Both the above numbers are further divided into three equally, to ensure equal participation of the number of respondents.

206÷3……68+2 = (68*3)+2

The actual group of units is in fact referred to as the sampling frame, sometimes known as the "sample frame" or "survey frame." This has already had a sample taken from it. Every unit in a simple random sample has an equal chance of being drawn and showing up in the sample. A thorough list or assortment from which your sample participants will be chosen in a certain way. In some way, the list will be arranged. In other words, each person in a population will have a unique identification and a way to get in touch with others. This enables to classify and encode information about segmentation features that is already known. With simple random sampling, every member of a population has an equal chance of being chosen for a sample. A more manageable and condensed section of the population may be investigated and assessed thanks to the sample. It's a key method for gathering information and drawing conclusions about a population. Simple random sampling is regarded as an impartial and fair way of selecting samples. The simplest sample selection technique is this kind of sampling. So that, in this study the author used simple random sampling method of sampling frame. Since simple random sampling is used equal chance was given for the sample groups. (Turner, 2003)

The main reason for giving equal chance for both group is just it is direct comparison. In this study remittance receiving and non-receiving households are compered. So that, the sample size was divided equally.

Table 3.3: Distribution of Survey

S/no	Name of selected kebeles	Remittance receiving	Not receiving	Total
1	Dilbara-Mago	66	65	131
2	Gunna-Bonochora	65	65	130
3	Siko	65	65	130
Grand Total		**196**	**195**	**391**

Source: information obtained from study kebeles and own computation results, 2022

3.4. Tools and Technique of Data Collection

In this study the author used primary and secondary data sources. Primary data was collected through survey by using well organized and structured questionnaire, randomly selected household interview from both remittance receiving and not receiving households, key informant interview of government officials who have information about the international migration and the livelihood of remittance receiving household and not. In addition, focus group discussions were also organized among the IMFM to get information for the qualitative part of the study. Secondary data was gathered and reviewed as part of the literature review of the study. Empirical and theoretical literature were used to understand the issue deeply.

3.4.1. Questionnaire Survey

Questionnaire Survey was conducted in order to collect primary information from the respondents for quantitative analysis. According to Kabir, questionnaire is extensively employed data collecting technique in survey (Kabir, 2016). With this data collection tool, 391 and 20 reserve and totally 411 sample respondents participated in the study to collect data related demography, socio-economic status, food security situation, and their coping strategies. Enumerators selected from the selected kebeles proportionally from both study representatives, which means from households receiving remittance and not receiving remittances. The enumerators were well trained in the way they communicate the respondents, the overview of the questioner, and the value of the survey in order to get the maximum level of quality. For the

purpose of creating clear understanding by respondents the questionnaire was translated into Ameharic and Hadyissa orally which are the languages spoken by the selected zone, woreda and kebeles. The questionnaire was coded and data entered into software called STATA. In general, for the specific objectives 4 and 5 questionnaires were applied. Under specific objective (1.3.2) there are four specific objectives are designed. Each specific objective was categorized to qualitative or quantitative methods. In this case specific objective 4 and 5 was categorized under qualitative research method.

Ordered logistic regression model

This model is used to estimate the linkage between food security and remittance. The linkage between household food security and adoption of this model were employed. 1 Food secured, 2 for mild, 3 moderate, and 4 food insecure according to (Stata. C, 2015) the model follows

The probability of a given observation for ordered logit were,

$$y\,(x) = \begin{cases} 1\ secured \\ 2\ mild \\ 3\ moderate \\ 4\ secured \end{cases}$$

Where y(x) = status of food security condition of farm household

The ordered logit model is used to predict an ordinal dependent variable given one or more independent variables. Ordinal regression was enabling us to determine which of our independent variables (if any) have a statistically significant effect on our dependent variable. The following Assumptions were checked. The dependent variable is measured on an ordinal level. The four independent variables are categorical or ordinal, non-multi-collinearity while, the independent variables are highly correlated with each other, proportional odds i.e., that each independent variable has an identical effect at each cumulative split of the ordinal dependent variable (Gujarati, 2004).

The order Logit model becomes for each category or order =ß0+ß1 sex + ß2 age + ß3 marital status +ß4 family size + ß5 education + ß6 international migration status + ß7 saving + ß8 cash income +ß9TLU + ß10 psnp + U

Where:

ß0 = Y-intercept

ß1, ß2 ---------- ß are the slopes of the equation in the model

U = disturbance term/Error term

For this analysis, the post-estimation test was done after logistic regression. In order to test the existence of multi-collinearity, both continue, and discrete explanatory variables were checked using Variance Inflation Factor (VIF). This statistical analysis indicates that there is no strong association among the variables. As a rule of thumb, if the VIF of a variable exceeds 10 that variable is said to be highly collinear, and it can be concluded that multi-collinearity is a problem (Gujarati, 1995). And link test and goodness -of- fit test was calculated to auto correlation and appropriateness of data with model. The information gathered from focus group discussion, was analyzed qualitatively.[10]

3.4.2. Key Informant Interview (KII)

In this level, the kebele officials, woreda social and labor office, youth and children office and returnees, IOM (for general information), local church leaders, and community leaders were interviewed in a great intention. These selected key informants expected to have first-hand knowledge about the community, its residents, and issues or problems the author was trying to investigate. It was conducted in appearing physically or face-to- face and making discussion in clear and open manner. In relation to the number of interviewees, scholars give their premises with the number. According to Muellmann and his colleagues, 12-15 is recommended (Muellmann et al., 2021). Greg Guest gave emphasis that interviews are sufficient and achieve the intended goal for researchers and explained that, 12 interviews are enough to reach the maximum data saturation.(Guest et al., 2006) In other author aid that 15-35 interviews are recommended (Kumar, 1989). In my opinion the last one is out dated and lacks reasonability. So that, in this research 12-15 KII was considered, and semi-structured interview questions was presented and participant freely engaged during study. In particular for the objective 1, & 2the author used the qualitative data collection tools, (KII, FGD).

3.4.3. Focus Group Discussion (FGD)

[10] Gujarati, D.N. (2004) Basic Econometrics. 4th Edition, McGraw-Hill Companies.

A focus group discussion was conducted in selecting individuals to participate in the study and contribute to open-ended discussions. The participants were selected to represent and to briefly explain the larger population. The participants of the FGD were individuals those who have enough experience or knowledge about the issue raised by the author and about their community to get the required information. The facilitator plays the role of creating the interaction within the focus group discussion in introducing the topic of a set of previously planned and well-designed open-ended questions. The number of participants of the FGD is not common and uniform. In relation to the number of the group, Mishra, argue that two focus group is needed without redundancy one another based on the content (Mishra, 2016). there is no common or standard number of participants in each group. FGD encourages participation and discussion, and helps limit the number of focus groups the author has to conduct (Morgan, 1988). These background characteristics include gender, race, age, or social class (Morgan, 1988). The author conducted two focus group discussions involving 11 to 13 participants per each group. The first FGD held in Dilbara-mago kebele contained 13 individuals and Gunna-bonochora 11 individuals.

Both FGD was organized based on homogeneity i.e., similar characteristics in background and the goal of groups to get genuine data from the participants. According to this research participants of FGDs are remittance receiving household who sent one or more household members to RSA, and they receive money in terms of remittance. The author recruited individuals in dilbara mago kebele those who receive remittance and almost they have similar livelihood. This first focus group discussion held in dilbara-mago kebele at one of the respondent's residential compounds on Friday, July 19, 2022. Attendants are namely known but listing down their names is not mandatory. Based on the concept of data saturation and taking into consideration the study subject, reasonable number of participants decided. According to Mishra usually 10-12 individuals may participated in each group but he suggested that the desirable size for a focus group is 6 to 8 participant (excluding researchers), (Mishra, 2016). Therefore, as many writers and argue that the minimum number are 6 and the maximum number are 12. This study conducted FGD with two groups from both study subjects and the number of participants in each group was 7. This is because the average number was taken; it helps to discuss in-depth, to get well organized information, it minimizes redundancy of information, saves time and easy to manage and record ideas risen by the participants.

3.4.4. Secondary Data Review

Secondary data was collected in reviewing reliable documents, reports of UN agencies (IOM, OCHA, UNHCR), Ethiopian government responsible offices, and NGOs documents and other related documents are included in this desk review process.

3.5. Techniques of Data Analysis

Since the study employed mixed approach (Qualitative and Quantitative approach), the analysis techniques used separately for both. Quantitative data is analyzed by using STATA software to describe key findings for the HFIAS and CSI scores. Basically, measuring central tendency and variance and standardization (dispersion) were employed in data analysis. HFIAS was analyzed by using an ordered logit model; it is basically used to categorize the study subject based on their nature. In the case of this study, the categories are remittance receiving households and not receiving households. The qualitative and quantitative results are presented logically and in narration, tabulation and triangulation for creating better understanding. Each household's HFIAS category variable is first calculated by giving it a code for the food insecurity (access) group it belongs to. Prior to assigning the food insecurity (access) category codes, the data analyst have coded frequency-of occurrence as 0 for all instances where the response to the related occurrence question was "no." (For example, if Q1=0 then Q1a=0, if Q2=0 then Q2a =0, etc.). To guarantee that families are categorized according to their most severe reaction, the four food security categories should be developed consecutively, in the same sequence as indicated below.

Calculate the Household Food Insecurity Access category for each household. 1 = Food Secure, 2=Mildly Food Insecure Access, 3=Moderately Food Insecure Access, 4=Severely Food Insecure Access HFIA category = 1 if [(Q1a=0 or Q1a=1) and Q2=0 and Q3=0 and Q4=0 and Q5=0 and Q6=0 and Q7=0 and Q8=0 and Q9=0] HFIA category = 2 if [(Q1a=2 or Q1a=3 or Q2a=1 or Q2a=2 or Q2a=3 or Q3a=1 or Q4a=1) and Q5=0 and Q6=0 and Q7=0 and Q8=0 and Q9=0] HFIA category = 3 if [(Q3a=2 or Q3a=3 or Q4a=2 or Q4a=3 or Q5a=1 or Q5a=2 or

Q6a=1 or Q6a=2) and Q7=0 and Q8=0 and Q9=0] HFIA category = 4 if [Q5a=3 or Q6a=3 or Q7a=1 or Q7a=2 or Q7a=3 or Q8a=1 or Q8a=2 or Q8a=3 or Q9a=1 or Q9a=2 or Q9a=3] Where, Q1= Occurrence question given to the respondents and Q1a= Frequency of the occurrences Coates, J., Swindale, A., Bilinsky, 2013).

3.5.1. Model and Variable Specifications

3.5.1.1. Models

The models employed in this study were HFIAS, CSI, and HHFB models.

The **Household Food Insecurity Access Scale (HFIAS)**, which measures the effects of development food aid programs on the access component of household food insecurity, offers a straightforward and user-friendly method for doing so. The manual provides guidelines for data collection and analysis as well as a standard questionnaire. The HFIAS is made up of nine questions that have been used in multiple nations and seem to distinguish between households who are food secure and those that are not across various cultural contexts. The data produced by the HFIAS can be used to monitor changes in a population's food insecurity situation over time as well as to estimate the prevalence of household food insecurity (access component) (Coates et al., 2007; Coates, J., Swindale, A., Bilinsky, 2013).

Coping Strategy Index (CSI): The CSI tracks behavior that what people do when they don't have access to enough food. It calculates the changes that HH make to their consumption and way of life. A few examples of coping mechanisms include those used by the Global IPC (Integrated Phase Classification) team, FAO/FSNAU (UN Food and Agriculture Organization/Food Security and Nutrition Analysis Unit for Somalia), and WFP/VAM (World Food Programme/Vulnerability Analysis Mapping unit). One such tool is the Coping Strategies Index (CSI). Although it was created in Uganda, Ghana, and Kenya, it is currently utilized in at least nine other African nations as well as others in the Middle East and Asia for early warning and monitoring and assessing food security. The CSI tracks actions, or what people do when they don't have access to adequate food. People handle household food shortages using a variety of fairly common behavioral reactions to food insecurity, or coping mechanisms.

These coping mechanisms are simple to see. Information on coping mechanisms can be gathered more quickly, easily, and affordably than actual household food intake data. Therefore, the CSI is a useful tool in emergency situations where other approaches are impractical or too late. The CSI can be used to evaluate the effectiveness of food assistance programs, as a forewarning system for impending food crises, and as a tool for determining the need for food assistance as well as if it has been directed toward the households with the greatest food insecurity. The tool is used to determine which regions and demographic groups have the greatest requirements for food relief. Additionally, it can give insight on the frequently elusive causes of high malnutrition rates. Finally, CSI is helpful for observing long-term patterns in food insecurity if coping mechanisms are followed over an extended period of time *(*Maxwell et al*.,* 2008).

Household Food Balance Model: The global food crises of 1972–1974 are to blame for the worry over food security. The individual right to appropriate nourishment was acknowledged in the Universal Declaration of Human Rights in 1948 (Maxwell and Frankenberger, 1992:45). At the World Food Conference held in 1974 by the Food and Agriculture Organization of the United Nations, the idea of food security first came into existence. This shows that the country could produce or export food to achieve food security; as a result, the availability and price stability of fundamental food-stuffs could secure food supply on a global and national level. Following this, the 1996 World Food Summit set a goal to reduce the proportion of hungry people by half by the year 2015 and the Millennium Development Goals set a goal to do the same (FAO and WFP, 2010). According to the most recent FAO estimates (FAO, IFAD, and WFP, 2015), all developing countries have almost achieved the MDG, cutting the percentage of hungry people in half. However, several nations have fallen short of the World Food Summit's goal to cut the number of hungry people in the world in half by 2015(Abi et al., 2015).

3.5.2. Variable Specification

3.5.2.1. Hypothesis and operational definition of the study variable

Household food insecurity is basically the dependent variable in this study. It is hypothesized as a function of the following variables.

3.5.2.2. Age of household head (AHH)

It is a continuous variable measured over the years. As the age of the households' head increased, it is assumed that farmers can acquire more knowledge and experience easily and adopt modern technology. But in other words when the age of the household head increased or get old it is difficult to make agricultural, off-farm activities and non-farm activities by using income source like remittance (Kennedy, 2002; Abadi et al., 2018a, pp. 14–15).

3.5.2.3. Educational background of Households' Head (Edu. HHH)

It is a continuous variable measured by year of schooling. Educated households easily change the opportunity in relation to receiving remittance. They start small businesses and adopt modern technology for farming, and they take risks to change their livelihood. They manage their farm and domestic animals better by using improved practices, so that increase total yield. (Ermias, 2018). Educated household heads expected to change their livelihood in a fast manner when they get opportunities to do so. One of the opportunities that make them change their life is their source of income. As stated in this study remittance is taken as one of income source. In general, educated household heads' and having remittance leads to a food security situation. So, the expected outcome of this study is to have a negative effect on the severity of households' food insecurity.

3.5.2.4. Sex of households' head (SEX HHH)

It is a dummy variable (that is 1 for male and 2 for female). According to most of Ethiopian culture and societal setup male headed households have more access to agricultural activities, using technologies and off-farm activities than the female headed households and also, they diversify their income sources (Teklay et al., 2015; Karale, 2015). Due to this reason those households receiving remittance were better to work and maximize income source performing multiple activities. In this study, it is expected to have a positive effect on severity of households' food insecurity.

3.5.2.5. Family size of household (FSHH)

It is a continuous variable measured by adult equivalent that live and consume from the same household. An increase in household size implies more people to be fed from the limited resource (Mequanent and Esubalew, 2015; Ahmed et al., 2018). Large household size is

negatively associated with food security. Even if the household received remittance the size affects and hinder the household to start additional way of getting income using the amount of money received. In this study, family size is expected to have a positive effect on severity of households' food insecurity.

3.5.2.6. Receiving Remittance (RRHH)

It is a continuous variable. It is assumed that households that get financial support from internationally migrated family members buy food from the market, and it increases their access to food and buying of agricultural inputs (Zhou et al., 2019). It is expected to have a negative effect on the severity of households' food insecurity.

3.5.2.7. Participation in Productive Safety Nate Program (PSNP)

It is a dummy variable with value 1 assigned as participating in the program and 2 if otherwise. Participation in the safety net program is to protect asset depletion at the household level and created communal assets at the community level. Households who get the opportunity to participate in the safety net program are more likely to obtain food and cash aid. It is expected to have a negative effect on the severity of households' food insecurity.

3.5.2.8. Size of Cultivated Land (SCULLAND)

Size of cultivated land is a continuous variable measured in hectare. Size of cultivated land increased the possibility that a household gets more output as it remains a basic resource for food production (Ahemed, 2015). It is expected to have a negative effect on the severity of households' food insecurity.

3.5.2.9. Household Total Income

Household total income is the function of agricultural income, off-farm activity, and remittance received from IMFM.

Table 3.3: Summaries of Variables Measurement and Hypothesis

Variable	Variable Type	Variable definition and Measurement	Hypothesis
Sex	Dummy	1 if Male, 2 if Female	(-)
Age of the respondent	Continuous	Age of the household head	(-)
Family Size	Continuous	Family size of the household	(-)
Land Holding (rural)	Continuous	Calculated land in hectare	(+)
Education status	Dummy	Educational status of respondent	(+)
Livestock Holding	Continuous	Number of livestock calculated in TLU	(+)
Distance to Market	Continuous	Distance to the nearest market	(-)
Off-farm activities	Continuous	Income from off-farm activities	(+)
Remittance Income	Continuous	Income from relatives from international remittance	(+)

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION

This chapter deals with the analysis and discussion of data from interviews, questionnaires, key informant, and the document review. The presentation of the data depicts the socioeconomic and demographic characteristics of respondents with respect to identified explanatory variables. The second subsection presents the root causes of household food insecurity of study area, and third sub-section presents the food security status of study household measured using HFIAS and ordered logit model for identification of the impact of receiving and utilizing remittance on household food security. The final sub-section presents the result of Focus Group Discussions (FGD) and Key Informant (KII) Interviews.

4.1. Socio-demographic characteristics

This sub-section explains the socio-demographic characteristics of the study area dividing into categorical and continuous variables. such as age of the respondent, sex of the respondent, marital status of respondent, family size, educational level, access to remittance, total HH income, food expenditure from remittance, remittance expenditure for other purpose, which is considered that their outcome have positive or negative influence on household food security situation of study area. From the tables below sex distribution of the sample household resulted 95.91% (375) and 4.09% (16) male and female respectively. Regarding educational status of the respondent 59.08% (231) have no formal education, 18.16% (71) have ability of read and write, 13.81% (54) have primary (1-8 class), 3.58% (14) secondary (9-12), certificate and diploma 3.07% (12) and 2.30% (9) respectively.

Table 4.1: Socio-economic characteristics of the respondent for categorical variables

Name of the variable	Catagory	Frequency	Percentage
Sex	Male	375	95.91
	Female	16	4.09
Marital Status	Married	373	95.40
	Divorced/separated	2	0.51
	Widowed	16	4.09
Educational Status	No formal education	231	59.08
	Read and write	71	18.16
	Primary (1-8 class)	54	13.81
	Secondary (9-12 class)	14	3.58
	Certificate	12	3.07
	Diploma	9	2.30
PSNP(Are you registerd/benefited)	Yes	59	15.09
	No	332	84.91

Source: Own calculations result using STATA 15.

Table 4.2: Socio-economic characteristics of the respondent for continous variables

Name of the variable	Observation	Mean	Std. Dev.	Min	Max
Respondent Age	391	68.99233	5.974084	56	81
Houshold family size	391	6.299233	1.294951	4	11
Total remittance received	391	53693.09	87344.63	0	700000
Off-farm activity income	391	1726.343	9180.766	0	80000
Total household income	391	55419.44	88069.14	0	700000

Source: Own calculations result using STATA 15.

According to the above table the minimum and maximum age of the respondent was 56 and 89 respectively. Regarding the household family size, the minimum was 4 and the maximum was 1. Interims of total remittance received, from the total sample size 196 households sent their family member to RSA, but only 187 household get assistance (remittance). The remaining 9 migrants are not sending remittance for their FPO. So, including non-remittance receiving households the amount of income ranges from zero to 700,000 for those who have remittance from their migrated family member/s from RSA. If we exclude the household with no remittance access the minimum amount of remittance received per annum is 11,000 and the maximum is 700,000.

4.2. Distribution of migrants in terms of kebeles and number of migrants per household.

Table 4.3: Family members migrated to RSA in terms of Kebele (N=196)

	How many family members are migrated to RSA				
Kebeles	**Only one**	**Two**	**Three**	**Four**	**Total**
Dilbara Mago	43	19	3	1	66
	%21.94	9.69	1.53	0.51	33.67
Gunna Bonochora	50	11	3	1	65
	%25.51	5.61	1.53	0.51	33.16
Siko	41	17	4	3	65
	%20.92	8.67	2.04	1.53	33.16
Total	134	47	10	5	196
	%68.37	23.98	5.10	2.55	100.00

Source: Own calculations result using STATA 15.

According to the above table at least one individual migrated to RSA in remittance receiving household. Practically the author found more than four family members migrated to RSA. In one household six family members migrated to RSA but the status of the two is unknown for two and half years and the FPO and IMFM are worrying about the situation. The mother told the author that "*my sons are not died God didn't do this on me, I am begging Him all the time, he brings my sons to me…*" in tears. According to table 4.9, 68.37 % households sent one family member each to RSA. Referring to the kebele of the respondent, Gunna-bonochora sent 25.51% one from a household to international migration. Siko is the third to send 20.92% one from a household.

4.3. Characteristics of international migration of the household

Table 4.4: Assistance from internationally migrated family in terms of Kebele

Kebele of respondent	Do you get assistance from your internationally migrated family members	
	Yes	No
Dilbara Mago	62	4
	%31.63	2.04
Gunna Bonochora	63	2
	%32.14	1.02
Siko	62	3
	%31.63	1.53
Total	187	9
	%95.41	4.59

Source: Own calculations result using STATA 15.

As shown in Table 4.4, 95.41% of the respondent, internationally migrated family received money from their family members migrated to RSA. From those who are migrated to RSA 4.59% or 9 households did not receive money for their family members due to unknown reasons. Those who did not send money are 4 (2.04%) from Dilbara-mago, 2 (1.02%) from Gunna-bonochora, and 3 (1.53%) from Siko.

Table 4.5: Food Security Status of Respondents by Gender (Results from HFIAS)

HFIAS	Respondents		
	Male	Female	Total
Food Secure	12	0	12
	%3.2	0	3.1
Mildly Food Insecurity	46	2	48
	%12.27	12.5	12.27
Moderately Food Insecurity	181	11	192

	%48.27	68.75	49.10
Severely Food Insecurity	136	3	139
	%36.27	18.75	35.55
Total	375	16	391

Source: Own calculations result using STATA 15.

According to table 4.5, 3.2% (12) of households were food secure. Regarding mildly food insecure, 12.27% (46) for male and 12.5% (2) for female, moderately food insecure for male is 48.27% (181), and 68.75% (11) for female. Severely food insecure female headed household were 18.75% (3) and 36.27% (136) were male headed household. The food security situations of the study area are concentrated in moderate food insecurity situation.

Table 4.6: Occurrence and frequency responses of HFIAS questions of respondents in 2022

			Redundancy of food insecurity situations		
Occurrence questions	**No**	**Yes**	**Rarely**	**Sometimes**	**Often**
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Worried hh not enough food?	12 (3.07%)	379 (96.93%)	63 (16.11%)	151 (38.62%)	165(42.20%)
Not able to eat preferred food?	13(3.32%)	378 (96.68%)	51 (13.04%)	192 (49.10%)	135(34.53%)
Limited variety of foods?	12 (3.07%)	379 (96.93%)	46 (11.76%)	190 (48.59%)	143 (36.57%)
Eating food you didn't want to eat?	36 (9.21%)	355 (90.79%)	43 (11.00%)	111 (28.39%)	201 (51.41%)
Eating smaller sizes of foods?	38 (9.72%)	353 (90.28%)	26 (6.65%)	122 (31.20%)	206 (52.69%)
Have to eat fewer meals in a day?	41(10.49%)	350 (89.51%)	34(8.70%)	115(29.41%)	201(51.41)
No food to eat any kind?	15(35.81%)	251(64.19%)	108 (27.62%)	57 (14.58%)	89 (22.76%)
Go to sleep at night hungry?	207 (52.94%)	184 (47.06%)	79 (20.20%)	102 (26.09%)	4 (1.02%)
Go a whole day without eating?	360 (92.07%)	31(7.93%)	27 (6.91%)	1 (0.26%)	-

Source: Own computation using STATA15, 2022

As shown in table 4.6, households that were worried about not having enough food to eat were 379 (96.93%); which means most of the participants of the study are in the situation of worried

about food to eat. This situation seems to be a common phenomenon for the community as well. 379 (96.93%) of the respondent's answers "yes" they were not able to eat based on their preference because of lack of resource in the past 30 days or four weeks. Almost all of the respondents have no chance to have food of their preference. 378 (96.68%) of respondent said "yes" for the question "…did you or any household member have to eat limited variety of food…?" This is also the maximum number of households focusing on a limited variety of food. The reason is not necessarily due to lack of resources only, but also lack of utilization of available resources. As we can see in the above responses it is similar that 355 (90.79%) of the respondents rely on less preferred food to eat. They are obligated to eat foods without their interest-based lack of resource to obtain other types of food. Households who answered "yes" for the question smaller size of meal are 353 (90.28%). They need more but due to lack of resources they used to eat smaller portions of food at their mealtimes. In terms of minimizing meal time or eating fewer meals, households accounted for 350 (89.51%) of the respondents. In most cases households fall under this category jumped one mealtime at all due to lack of resources to substantiate and fulfill their demand. The other 251 (64.19%) of the households responded to no food to eat any kind in the last four weeks due to lack of resources. One of the critical conditions needs to be taken into consideration was that households went to sleep at night hungry was 184 (47.06%), and 31 (7.93%) went a whole day without eating.

4.4. Food security study of the selected kebeles

The HFIAS score was used to determine how common food insecurity was during the preceding month. Based on the responses to the nine "frequency of occurrence" questions, an estimate was made for each family. A higher number indicates a higher risk of food insecurity. The household food insecurity score has a range of 0 to 27, with a lower value indicating no food insecurity. Families can be categorized as being either food secure (FS), mildly food insecure, moderately food insecure, or severely food insecure. Table 4.6 displays the frequency of HFIAS circumstances and the positive replies across sample households in the study area.

Table 4.7: HFIAS results in the study area

HFIAS	Freq.	Percent
Food Secure HH	12	3.07

Mildly Food Insecure HH	48	12.28
Moderately Food Insecure HH	192	49.1
Severely Food Insecure HH	139	35.55
Total	391	100

Source: Owen computation STATA15, 2022

According to table 4.7, 3.07% (12) were food secure households, 12.28% (48) were mildly food insecure, 49.1% (192) were moderately food insecure, and 35.55% (139) were severely food insecure households.

4.5. Food security status based on CSI

Measuring food security/insecurity is a critical issue in relation to cost and its complexity to measure and analyze. There are many tools developed in different organizations to create fast and easy analysis of food security situations. The coping strategy index (CSI) is one of those developed tools to measure food security situation. Although it was created in Uganda, Ghana, and Kenya, it is currently utilized in at least nine additional African nations as well as others in the Middle East and Asia for early warning and monitoring and assessing food security (Maxwell, 2008).

The threshold of CSI is not standard or similar everywhere. It differs from place to place and context to context. According to OXFAM report (2018), the CSI analysis was categorized into three. a score of 40 taken as low coping strategy index, 80 medium coping strategy index, and 120 high coping strategy indices (Subedi & Kent, 2018). According to Feinstein International Center, the CSI classified with Food Consumption Scores as 0-2 food secure, 3-12 mildly food insecure, and 13 and above moderately/severely food insecure (Maxwell et al., 2013). According to online source the CSI category categorized as 0-50 low CSI, 51-100 medium CSI, and above 100 high CSI. The same source asserts that this threshold is taken as the context of the study and modified to 0-40 low CSI, 41-80 medium CSI, and above 80 high CSI.[11] Taking all the above

[11] https://www.indikit.net/indicator/21-coping-strategy-index-csi#:~:text=6)%20The%20scores%20are%20usually,80%3B%20and%20over%2080). Accessed on Saturday August 27, 2022

documents into consideration, the author of this paper categorizes the CSI as the context of the study area at least making it in line with the HFIAS results. The same data collected from the same study area so that the result will be approximately similar. So that the author categorized the CSI total of the study area as 20-40 low CSI, 41-53 medium CSI, and 54-71 high CSI. It is done simply dividing the CSI total outcome STATA in to three.

Table 4.8: Distribution of CSI before categorization 2022

Low Coping Strategy Index				**Medium Coping Strategy Index**				**High Coping Strategy Index**			
CSI Total	Freq.	Percent	Cum.	CSI Total	Freq.	Percent	Cum.	CSI Total	Freq.	Percent	Cum.
20	1	0.26	0.26	41	17	4.35	29.92	54	27	6.91	71.61
27	3	0.77	1.02	42	24	6.14	36.06	55	15	3.84	75.45
28	2	0.51	1.53	43	10	2.56	38.62	56	23	5.88	81.33
31	1	0.26	1.79	44	11	2.81	41.43	57	21	5.37	86.7
32	2	0.51	2.3	45	6	1.53	42.97	58	3	0.77	87.47
33	2	0.51	2.81	46	13	3.32	46.29	59	5	1.28	88.75
34	5	1.28	4.09	47	3	0.77	47.06	60	5	1.28	90.03
35	5	1.28	5.37	48	10	2.56	49.62	62	9	2.3	92.33
36	13	3.32	8.7	49	5	1.28	50.9	63	2	0.51	92.84
37	13	3.32	12.02	50	12	3.07	53.96	64	22	5.63	98.47
38	8	2.05	14.07	51	17	4.35	58.31	65	1	0.26	98.72
39	30	7.67	21.74	52	11	2.81	61.13	68	2	0.51	99.23
40	15	3.84	25.58	53	14	3.58	64.71	70	2	0.51	99.74
								71	1	0.26	100
								Total	391	100	

Source: Own computation STATA15, 2022

Table 4.9: Food security/insecurity status using CSI

Food security status using CSI			
CSI Total	**Frequency**	**Percent**	**Cumulative**
Low CSI (1)	100	25.58	25.58
Medium CSI (2)	153	39.13	64.71
High CSI (3)	138	35.29	100
Total	**391**	**100**	

Source: Owen computation STATA15, 2022

As shown in table 4.9, 100 (25.58%) of the households had low coping strategy index (20-40), which means the food security level of these households has improved and they tend to be food secure, but in most cases, they are in between food secure and mildly food insecure. From the same table we observe that 153 (39.13%) of the sample households had medium coping strategy index (41-53). This indicates that the households are using different coping strategies to overcome lack of food. The remaining 138 (35.29%) had high coping strategy index (54-71). In this category, households faced difficulties to have food. They were in a severely food insecure situation. In general, the results of CSI were almost like HFIAS results.

4.6. Determinant factors of food security status

The explanatory variables were subjected to a collinearity diagnosis or connection between the independent variables to determine the determinant factors impacting household food security status using the variance inflation factor (VIF) test prior to running the ordered logistic regression model. VIF calculates the inflated variance's value. According to studies, an explanatory variable with a high VIF (often 5 to 10 and above) indicates a multicollinearity issue and should be eliminated from the model along with the offending predictors. As a result, in table 4.10 below, the overall VIF was discovered to be 1.29, showing that no multicollinearity problem was uncovered. The VIF assesses how strongly the independent variables are correlated. It is anticipated by regressing a variable against each other variable. How effectively a variable is explained by other independent variables is shown by its VIF score.

Table 4.10: Linear regression test result using HFIAS

HFIAS	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Sex of respondent	-.078	.131	-0.60	.549	-.336	.179	
Age	.003	.005	0.59	.558	-.007	.013	
Education	.013	.024	0.54	.591	-.034	.06	
Family size	-.017	.021	-0.82	.411	-.059	.024	
Access to remittance	.286	.067	4.26	0	.154	.418	***
Total remittance received	0	0	-13.75	0	0	0	***
Off-farm income	0	0	-2.87	.004	0	0	***
TLU	.003	.019	0.15	.885	-.035	.041	
Constant	1.987	.41	4.84	0	1.18	2.794	***

Mean dependent var	2.171	SD dependent var	0.757
R-squared	0.568	Number of obs	391
F-test	62.673	Prob > F	0.000
Akaike crit. (AIC)	581.170	Bayesian crit. (BIC)	616.888

**** p<.01, ** p<.05, * p<.1*

Source: Owen computation STATA15, 2022

After running the command of regression VIF was computed, and the ordinal logistic regression completed. The next procedure is computing marginal effects running the command mfx using the categories of HFIAS and CSI.

A p-value larger than 0.05 (p>0.05) in ordinal logistic regression modeling denotes a better fit of the model data. There have been 391 observations. Models outperformed the null hypothesis in the LR Chi-squared test, which had a value of 329.558 (p=0.000), in order to better match the data. With a pseudo-R2 of 0.390, the independent variables can account for around 39.0% of the variation in the dependent variable, indicating a decent model fit.

Table 4.12: Ordered logistic regression using HFIAS

HFIAS	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Sex of respondent	-.195	.539	-0.36	.718	-1.252	.862	
Age	.018	.022	0.82	.412	-.025	.061	
Education	.072	.111	0.65	.513	-.145	.29	
Family size	-.078	.093	-0.85	.397	-.26	.103	
Access to remittance	-.285	.506	-0.56	.573	-1.277	.706	
Total remittance received	0	0	-7.02	0	0	0	***
Off-farm income	0	0	-2.68	.007	0	0	***
TLU	.024	.084	0.29	.775	-.141	.189	
cut1	-11.693	2.708	.b	.b	-17	-6.386	
cut2	-4.762	1.955	.b	.b	-8.593	-.932	
cut3	-.308	1.928	.b	.b	-4.086	3.47	
Mean dependent var		2.171	SD dependent var			0.757	
Pseudo r-squared		0.390	Number of obs			391	
Chi-square		329.558	Prob > chi2			0.000	
Akaike crit. (AIC)		538.037	Bayesian crit. (BIC)			581.693	

**** p<.01, ** p<.05, * p<.1*

Source: Owen computation STATA15, 2022

After running the command of regression VIF was computed, and the ordinal logistic regression completed. The next procedure is computing marginal effects running the command mfx using the categories of HFIAS and CSI.

4.7. Marginal Effect

In a categorical response model, the marginal impact of a predictor calculates how much the likelihood of being food secure varies as the predictor changes. The marginal impact for a continuous predictor is a partial derivative of the likelihood of having access to sustenance in relation to the relevant predictor. It is the shift in event likelihood that occurs when a binary categorical predictor is switched between its levels. The Average of the Marginal Effects is a metric for the predictor's total impact (AME). Additionally, there may be interactions between qualitative factors, which could result in the multi-collinearity issue. Contingency factors were calculated to find this issue regarding every combination of qualitative factors.

4.8. Ordinal logistic regressions

An ordered logistic regression model was used in this study to forecast how remittance use would impact the study area's food security/insecurity situation. It is employed to examine the impact of specific relationship types on the study of kebeles food security/insecurity state. The results of the ordinal logistic regression model are presented in table 4.12 above. At the 1%, 5%, and 10% levels of significance, it was determined that two (2) explanatory factors had a statistically significant impact on the food security status of study subjects. Total remittance received and off-farm income. The other contributing factors were no statistically significant. At a 5% confidence level, it was discovered that total remittance received was significantly and favorably associated with the presence of food insecurity in families (0.000).

Table 4.13: Marginal effects after ordered logit model using HFIAS

Variables	Marginal effect dy/dx for Food Secure	Marginal effect dy/dx for Mild food Insecure	Marginal effect dy/dx for Moderate food Insecure	Marginal effect dy/dx for Severe food Insecure
Sex	.0000123	.0110684	.0141778	-.0252584
Age	-1.13e-06	-.0010209	-.0013077	.0023298
Educational level	-4.56e-09	-.0041119	-.005267	.0093835
Household family size	4.93e-06	.0044483	.0056979	-.0101512
Access to remittance	0.000018	.016206	0.0207587	-.0369827

Total remittance received	2.68e-09	2.42e-06	3.10e-06	-5.52e-06
Off farm activity income	2.39e-09	2.16e-06	2.76e-06	-4.93e-06
Tropical Livestock Unite (TLU)	-1.51e-06	-0.0013663	-0.0017501	0.0031179

Source: Owen computation STATA15, 2022

4.9. Total remittance received

Total remittance received is the function of monthly cash and irregular cash assistance for FPO. It was calculated annually. This variable has a statistically significant and positive effect on household food security at 5% (P=0.000) as indicated in Table 4.12 above. It shows those households who received remittance are more food secure than those who have not received. The marginal effect in Table 4.13, shows that remittance receiving households, other variables kept constant, the probability being more food secure is increased by 2.68% as compared with households who are not receiving remittance. Furthermore, as households in food security category get more remittance, their food security situation more sustain and they have the opportunity of resisting shocks increase.

The average of being mildly food insecure is 2.42% and when these households get additional remittance, they have the possibility of being food secure by 2.42%. Due to receiving remittance the probability of being moderately food insecure is more increase by 3.10%. In addition, when these households receive more and more remittance, they have possibility of being mildly food insecure by the stated precent. The average of being severely food insecure is decreased by 5.52% due to receiving remittance. When these households get more and more remittance, they have chance to be moderately food insecure. Based on the above-mentioned results, remittance has positive contribution on food security situation of rural households in the study kebeles. This result is agreed with a study conducted by Abadi and his collogues (2018) who found that remittance receiving households had a positive and significant impact on household food security status. It is believed that they have an opportunity to have agricultural materials in cash and they reduce expenditure in relation to credit base purchase of fertilizer and specialized seeds (Abadi et al., 2018b).

Besides, the participants of the FGD pointed out that the reason for their food insecurity. The goal of the meeting or FGD was to meet with group individuals to get substantiated information about international migration situation and its outcomes. At the beginning the main idea of the meeting to introduced the author and the objective of the discussion in clear manner. Then the checklist questions were raised and the participants gave their opinion in each of the questions. The participant in dilbara mago agree that the main pushing factor for international migration of their family member is basically poverty, lack of infrastructure, the difficulty of the topography of the land to cultivate (it is most of plateaus and mountain).

One of the FGD participants indicated that:

> *Let me share a local's account of how we are facing difficulties; we have no access to water to drink and to use in our house we fetch water from far distance by the back of donkey and human (our wives). Due to this we suffer from waterborne diseases. There is not manufacturing organizations to get employed, even we have not electricity, we have not road infrastructure, and we haven't get visited by the government officials unless election campaign has started. As you can see our land is fragmented and diminished from time to time due to dense population. So, we send our people to different areas to get income. Especially, our children migrated to "south" [RSA] and they send us money in different times of the year. We celebrate "Meskel" [The public holiday of the finding of the true cross] by the help of our children in south. They also send us money when we get sick. They send us money when we are in any social situation and in need of money. But we know that they are living in difficult situations in other countries. All the time we worry about them we receive many corpses from RSA and our hearts are broken, life will be twisted into other direction and sever poverty comes into us. But due to the enormous difficulties we face, we do so…* (FGD1 participant at Dilbara-Mago kebele, July 19, 2022)

Most participants indicate that, their livelihoods are not that much changed; they use food as usual, and they bless the plant "*inset*." As they indicated, most community members celebrate Meskel in credit base, and they pay the balance in crops specifically wheat [highly cultivated crop]. So, this makes them in a vicious circle of poverty and basically food insecurity situation persists. But since they receive remittance, they can remove credit base celebration of Meskele

holyday, and they use in cash base. This also protects their grains from being settled of their credit. The cultivated grain is used for other purposes and helps them to ensure food security in a better way.

4.10. Off-farm income

As expected, the variable has a statistically significant and positive influence on the level of household food security at status 5% (P=0.007) as indicated in Table 4.12 above. This implies that households who had off-farm activity income had a high chance to be food secure to those who had less annual off-farm income. Furthermore, the marginal effect in Table 4.13 confirms that a unit increase in total annual off-farm income raises the likelihood of household to be food secure and suffer from just mild food insecurity while lowering the likelihood that such families will experience moderate or severe food insecurity. This is because a household's purchasing power will improve as income rises, allowing the household head or responsible individual to buy food from the market and ultimately raising the likelihood that the household will have enough food.

4.11. Remittance receiving vs non-receiving household using HFIAS

Based on the results of Household Food Insecurity Access Scale (HFIAS), food secured households were 12 and they are remittance receiving households, in the Mildly Food Insecure (1-9) scale 42 from remittance receiving household and 6 from non-remittance receiving. In the case of moderately food insecure groups, 121 are from remittance receiving household and 71 from non-receiving household. Lastly, in terms of Severely Food Insecure (19-27) grouping, 12 were from remittance receiving household while the remaining 127 were from non-receiving household. Based on this result remittance is statistically significant and it has its own impact on the food security of receiving households.

Even though, the result shows most of the households those who send their family member/s to RSA, still living in the situation where they are before. But according to the discussion with the participant of FGD was held in Gunna bonochora kebele, *Hebicho* sub kebele in one of the respondent's petty trade houses. This second group discussion recruits 11 individuals and all are non-receiving of remittance. Some are registered in PSNP, and they get a up-to-dated amount of

money which is 300.00 Birr per head. This means from the beginning the PSNP participant get 60birr, and revised to 90 birr per head. Currently revised to 300birr per head for those who are selected and participated in the program. From the total participant of this group 2 individuals are registered in PSNP. The problems they are facing are like the above first FGD. Lack of water, basically drinking water resource, land fragmentation, geographic setting arrangement of the land, uncontrolled population growth, and this all resulted in food insecurity situation of the community. They indicate that they have no opportunity to send their children to RSA, even though they are interested to do so.

One of the FGD participants indicated that:

> *To tell the truth, I always think about sending one or two of my boys to RSA as (…called the names of those who send their children to RSA…). Those who send their children to RSA send their children to school, they wear good clothes, and even they eat their food in different ways. Some of our neighbors have constructed houses in town. So, I wish to be confident and talk as (…called the names of those who send their children to RSA…).* (FGD2 participant at Gunna-bonochora Kebele, July 25, 2022)

They feel inferiors in front of those neighbors who send their family members to RSA. The communities understand, and perceive that sending one or more family members to RSA, is one of the indicators of social trust and getting trusted and prestigious. The scenario of sending or not sending family member to RSA, create unnecessary competition and difference among the community. The households send their family member/s to RSA consider themselves as somewhat different from those households not send their family member to international migration called RSA. Both category of community members psychologically, create social status for themselves.

Table 4.14: Comparison remittance receiving and non- receiving HH using HFIAS

HFIAS	Remittance		Total
	Receiving HH	Not Receiving HH	
Food Secure	12	0	12
Mildly Food Insecure	42	6	48

Moderately Food Insecure	121	71	192
Severely Food Insecure	12	127	139
Total	187	204	391

Pearson chi2 (3) = 146.7029 Pr = 0.000

Source: Own calculations result using STATA 15.

4.12. Remittance receiving vs non-receiving household using CSIs

From the above table Coping strategy Index Category will be (20-40= Low Coping strategy index (41-53= Medium Coping Strategy Index) (54-71= High Coping Strategy index). The interpretation is when Coping strategy index is low it means high food security. In the case of low CSI, 42.78% (80) of households receive remittance and 9.81% (20) of household do not receive remittance. In the case of Medium CSI 50.80% (95) receive remittance, and 28.43% (58) for those who are not receive remittance, and in the case of high CSI 6.42% (12) are household receive remittance 61.76% (126) of household do not get remittance. Receiving remittance creates differences among the respondents of study area.

Table 4.15: Comparison of remittance receiving and non- receiving HH using CSI

CSI category	**Remittance**		
	Receiving Remittance HH	Non-Receiving Remittance HH	Total
Low CSI	80	20	100
	42.78	9.81	25.58
Medium CSI	95	58	153
	50.80	28.43	39.13
High CSI	12	126	138
	6.42	61.76	35.29
Total	187	204	391
	100.00	100.00	100.00

Source: Owen computation STATA15, 2022

In the linear regression result remittance shown as statistically significant in p-value (0.000). Since the author use STATA software to analyze data, there are steps to follow. The first step is be regressing the data. This means running the software by the command of linear regression. Then it gives way to run variance inflation factor (VIF).

Table 4.16: Linear regression result using CSI

CSIcat	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Sex of respondents	-.033	.167	-0.20	.843	-.361	.295	
Age	-.004	.006	-0.57	.568	-.016	.009	
Edu. status	-.005	.03	-0.16	.875	-.065	.055	
Family Size	-.025	.027	-0.95	.345	-.078	.027	
Access to remittance	1.035	.136	7.62	0	.768	1.302	***
Off-farm activities	0	0	0.40	.692	0	0	
Total hh income	0	0	1.00	.316	0	0	
Remittance for other expenditure	.022	.024	0.93	.356	-.025	.069	
TLU	-.016	.025	-0.66	.508	-.065	.032	
Constant	.964	.56	1.72	.086	-.136	2.065	*
Mean dependent var		2.097	SD dependent var			0.775	
R-squared		0.332	Number of obs			391	
F-test		21.027	Prob > F			0.000	
Akaike crit. (AIC)		771.715	Bayesian crit. (BIC)			811.402	

**** p<.01, ** p<.05, * p<.1*

4.13. VIF test result for CSI

Prior to executing the ordered logistic regression model, the explanatory variables were subjected to a collinearity diagnostic or link between the independent variables to identify the determinant factors affecting household food security status. The value of the inflated variance is determined by VIF. Studies have shown that an explanatory variable should be removed from the model together with the problematic predictors, if its VIF is high (often 5 to 10 and above). Consequently, it was found that the total VIF was 1.842 approximately 1.84, indicating that no multicollinearity issues were found. The VIF evaluates the degree of correlation between the independent variables. By regressing one variable against another, it is foreseen. The VIF score of a variable indicates how well it may be explained by other independent variables.

Table 4.18: Ordered logistic regression using CSI, 2022

CSI	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Sex of respondents	.103	.527	0.20	.844	-.929	1.136	
Age	-.013	.02	-0.65	.514	-.051	.026	
Education	-.028	.093	-0.31	.76	-.211	.154	
HH Family Size	-.06	.082	-0.73	.463	-.222	.101	
Access to remittance	2.965	.437	6.79	0	2.109	3.821	***
Off-farm activities	0	0	0.21	.832	0	0	
Total HH income	0	0	0.78	.437	0	0	
Remittance for other expenditure	.061	.071	0.86	.391	-.078	.2	
TLU	-.024	.077	-0.30	.761	-.175	.128	
cut1	1.871	1.724	.b	.b	-1.508	5.25	
cut2	4.227	1.743	.b	.b	.811	7.643	

Mean dependent var	2.097	SD dependent var	0.775
Pseudo r-squared	0.175	Number of obs	391
Chi-square	147.871	Prob > chi2	0.000
Akaike crit. (AIC)	721.389	Bayesian crit. (BIC)	765.044

**** p<.01, ** p<.05, * p<.1*

A p-value higher than 0.05 (p>0.05) in ordinal logistic regression modeling denotes a better fit of the model data. There have been 391 observations. The LR Chi-squared test result of 147.81 (p=0.000) indicated that models matched the data better than the null hypothesis. The

independent factors account for 17.5% of the variance in the dependent variable, according to the pseudo-R2, which indicates the model is well-fitted. In table 4.18 outputs from the ordinal logistic regression model using CSI reveal that, at the 1% level of significance, one (1) explanatory variable was found to have a statistically significant impact on the study subjects' food security status. Access to remittance is variable. The other contributing factors had no statistically significant differences.

4.14. Ordinal logistic regressions for CSI

Access to remittance was found to be statistically significant and negatively correlated with the food insecurity status of households at 1% confidence level (p=000). The negative coefficient of access to remittance indicates that an increase in access to remittance improve the likelihood of households being food secure (low CSI) is decreased by 4.31%, this is also shows that those who have access to remittance have possibility of being food secure than those households don't receive remittance. The likelihood of being medium CSI is decreased by 1.99%. This means it decreases the possibility of being in the state of medium coping strategy index. The average of being high coping strategy index increased by 6.3% and it shows that these households have the possibility of being transformed to medium CSI by the indicated percentage. As the marginal effect revealed that the access to remittance increases household's food security (table 4.19). This could be because of income from remittance would increase household's purchasing power or income to purchase food and cover other expenses. It lowers the risk of food insecurity status of the household in the study area. The value of the marginal effect in table 4.19 shows that, as access to remittance of a household increased by a unit, the possibility of a household being in the category of low coping strategy index would be increased. This result also agree with Abadi access to remittance were significantly lower Coping Strategy index (CSI) (Abadi et al., 2018b).

Table 4.19: Marginal effects after ordered logit model using CSI

Variables	Marginal Effect for CSI		
	dy/dx Low CSI	dy/dx Medium CSI	dy/dx High CSI
Sex of respondents	-.015049	-.0069356	.0219846

Age	.001855	.0008549	-.0027099
Education	.0041305	.0019036	-.0060341
HH Family Size	.0087898	.0040509	-.0128407
Access to remittance	-.4312286	-.1987393	.6299679
Off-farm activities	-3.34e-07	-1.54e-07	4.88e-07
Total HH income	-1.67e-07	-7.71e-08	2.44e-07
Remittance for other expenditure	-.0088682	-.0040871	.0129552
TLU	.0034256	.0015788	-.0050044

Source: Owen computation STATA15, 2022

4.15. Household Food Balance Sheet Model for Measuring Food Security

The concept of food security is extremely broad and multidimensional(Faridi & Sulphey, 2019; Berry *et al*., 2015; Adjimoti & Kwadzo, 2018), which encompasses the analysis of economic, socio-demographic, environmental and institutional issues ranging from global to national, regional, household and individual levels. A good indicator should then consider all aspects and generate a multidimensional index that encompasses the most significant factors from each dimension of food security (Adjimoti & Kwadzo, 2018). However, despite the variety of food security indicators that exist in the literature, there is no single method of all-encompassing indicator of food security that incorporates more than one dimension and most of the research done to date were based on one or a single indicator of food security analysis.

The most commonly identified food security indicators are the FAO method (using Food Balance Sheets and calories available per capita), Household Income and Expenditure Survey (HIES), Household Food Insecurity Access Scale (HFIAS), Household Food Consumption score (HFC)**,** Household Dietary Diversity Score (HDD), Months of Adequate Household Food Provisioning (MAHFP), Copying Strategy Index (CSI) and experience-based food insecurity measurement scales (Carletto et al., 2013; Berlie, 2015; Cordero-Ahiman *et al.,* 2018; Devereur and Tavenersmith, 2019; De Cock *et al.*, 2013; FAO *et al*., 2017; Maxwell *et al*., 2014; Moltedo *et al*., 2014; Ogundari, 2017). All these food insecurity measurement techniques have their own

advantages and limitations which are used by different countries based on the availability of data and their applicability to a particular area.

In this research, attempts were made to harmonize three measures of food insecurity indicators such as the FAO Food Balance sheet model (HFBM), Household Food Insecurity Access Scale (HFIAS) and Copying Strategy Index (CSI) to analyze and estimate the food security status quo of the surveyed households and to capture the various food security dimensions in the study area.

4.15.1. Household Food Balance Model (HFBM)

Measurement of household food security is usually indirect and based on food balance sheets and national income distribution and consumer expenditure data (Faridi, 2010). In the study *woreda* the study used a simple equation originally adapted by Degefa (1996) from FAO Regional Food Balance Model (HFBM) and modified by Messay (2011) and henceforth used by different researchers in Ethiopia. HFBM is employed to compute the net quantity of per capita food available. The net available food per household, as reported from household recall, was converted into dietary energy equivalent using EHNRI/FAO (1998)'s food Composition table for use in case of Ethiopia. Then, the medically recommended level of calorie per adult equivalent (2100kcal/day/person for Ethiopia) is used as a cut-off point for food insecure and food secure households or individuals. The following simple equation of HFBM is modified and used by Messay (2011) for household food security analysis.

NGA = (GP + GB + FA + GG + CC + MP + DP) - (HL+ GU + GS +GV)
Where,
NGA= Net grain available (quintal/household/year)
GP= Total grain production (quintal/household/year)
GB= Total grain bought (quintal/household/year)
FA= Quantity of food aid obtained (quintal/household/year)
GG= Total grain obtained through gift or remittance (quintal/household/year)
MP= Meat, meat-based products and poultry (kilogram/household/year)
DP= Dairy and dairy based products ((kilogram/household/year)

HL=Post harvest losses due to grain pests, disasters, thieves, etc. (quintal/household/year)
GU= Quantity of grain reserved for seed (quintal/household/year)
GS= Amount of grain sold (quintal/household/year)
GV= Grain given to others within a year (quintal/household/year).

The above measure was calculated as the percentage of households in a population group who do not consume sufficient dietary energy. It was measured by determining whether a household acquires sufficient food over the reference period to meet the dietary energy requirements of all of its members. If the estimated total energy in the food that the household acquires daily is lower than the sum of its members‟ daily requirements, the household is classified as food energy deficient (food insecure).

4.15.2. Analysis of Household Food Balance Model (HFBM)

A modified form of equation known as the "Household Food Balance Model," adopted from the FAO Regional Food Balance Sheet, was used to quantify food availability at the household level and to evaluate the food security circumstances of the rural sample households in the study area. The model was used to calculate per capita calorie consumption based on household grain food availability. Using the minimum recommended per capita kilocalorie requirements of 2,100 kcal per adult equivalent per day (Seid et al., 2021; Tora et al., 2021; (Weldearegay & Tedla, 2018; Wondimagegnhu and Bogale, 2020), an attempt was made to assess the food security status of

Food security status	Households with per capita calories of	No. of HH	Percentage

the surveyed farm households in the study area. Therefore, homes with per capita available kilocalories per day per adult equivalent above the minimum suggested kcal of 2,100 were considered to be in food security, while households with less than 2,100 kcal per adult equivalent per day were considered to be in food insecurity. Table 4.20 illustrates the distribution of the study areas surveyed households in terms of their capacity to meet various percentages of the minimum recommended amount of food availability in kilocalories per adult equivalent.

Table 4.20: Daily per capita food availability of the surveyed households

Food insecure	<2,100 kcal	295	75.45
Food secure	Over 2,100	96	**24.55**
Total		391	100
Mean kcal = 1483.4 Minimum kcal =580 SD = 531 Maximum kcal = 2625			

As described in table 4.120, based on the data collected and converted into kilo calories the percentage of food secure and food insecure households are 24.55%and 75.45% respectively. In other word, the finding revealed that of the total surveyed farm households in the study area, about 24.55% of the farm households could attain the minimum recommended allowance. However,

Source: Household survey data, 2022

about 75.45% of the sampled households were in a state of food insecurity during the year under investigation and consumed below the minimum recommended daily per adult equivalent kilocalorie allowance and these figures indicate the prevalence of critical food shortage facing the rural farm households in the study area. The finding of the study implied that more than three-quarters of the sampled households in the study area were food insecure indicating the high prevalence of food scarcity and unsustainable nature of food security. The result is in line with a study conducted in south Wollo zone, Ethiopia it was found that 20.9 and 79.1% of the sample households were food secure and food insecure, respectively (Alem-meta and Singh, 2018). In comparison with other areas, the prevalence of food insecurity (75.45%) in the study area is higher than 61.79% reported for rural Ethiopia (Abegaz, 2017), 62% reported for the central and northern Gonder zone in Ethiopia (Awoke *et al*., 2022), 60.55% reported for north Shewa zone of Amahara region in Ethiopia (Fikire and Zegeye, 2022), 37.6% reported for Wolaita Sodo town in Ethiopia (Tantu *et al*., 2017). However, the prevalence of food insecurity is lower than 77% reported for Bule-Hora district, Borona zone Oromia region of Ethiopia (Abdulla, 2015), 77% reported for Dodota district in Oromia region of Ethiopia (Dagne, 2016), 79.1 % reported for south Wollo zone of Ethiopia (Agidew and Singh, 2018) and 80% (Bazezew, 2012). The average available dietary energy of food secure and food insecure households were 3499.64 kcal and 903.3 kcal respectively.

The mean average dietary energy of total sample households was 1483.4 kcal and the standard deviation was 531 kcal (Table 6.8). The result is consistent with the finding of Agidew and Singh (2018), Gemechu *et al*. (2016), Ferede and Wolde-Tsadik (2018) and Sani and Kemaw (2019) who reported the mean calories intake of the sampled household was lower than the minimum calorie (2100 kcal) required for a healthy and productive life. However, finding appear contrary to those of Aragie and Genu (2017) and Million and Muche (2020), who reported the average calorie intake among sampled households in rural Ethiopia to be higher than the minimum recommended intake level.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

Food insecurity in rural households is deep-rooted and complicated. Understanding the complexity and depth of rural food insecurity would give an opportunity in the development of more effective policies and programs for the poor, paving the path for greater food security. The participants of this study in the selected area, assert that, the contributing factors for their food insecurity situation is unemployment, shortage of agricultural land, chronic persistent poverty, lack of infrastructures, and other factors. Due to this reason to change their livelihood, households send their children to international migration particularly to RSA. They also take risks in the process of sending their children to RSA in relation to the dangerous journey of the migrant to the hope land. Smugglers, human traffickers and border men are involved in the movement of the migrant in crossing the border of different countries on the way. The reason is to come out of chronic poverty and to improve their livelihood in the medium time period. According to KII, sometimes, the scenario would be to the reverse and make them more destitute than before. It is because, in some cases migrating individuals arrested by the policy of the countries they crossing, and imprisoned. Sometimes they may die. So that, things will be worsen for the household at the point of origin.

The goal of this study was to look at the contribution of remittance on food insecurity issues of the rural households in relation to international migration in Hadiya zone misha woreda. Both descriptive statics and econometric techniques were employed to assess the empirical data that was gathered from the study locations. Results of the descriptive analysis generally indicated that there are differences between remittance receiving and non-receiving rural households in the study area. Even though there is some improvement in the remittance receiving households, it is in the lowest improving rate. In some cases, it is difficult to differentiate households who have received remittance with those households which didn't receive remittance. That is why concerned, and responsible stakeholder intervention is needed in various issues of human well-being of the study area.

5.2. Recommendations

There are two policy recommendations implied in the results of this paper. Primarily, it is critical to include migration and remittances as significant components of food security initiatives in developing nations like Ethiopia given the favorable impacts of remittances on CSI and HFIAS outcomes. Secondly, Ethiopian responsible bodies take into consideration the legal issues of international migrants to RSA. From the very beginning the migration movement to RSA is illegal manner and the remittance sent to FPO is also in informal ways. After they arrive to RSA they also live and work in temporary residential permits and it will be renewed in a specific time period. As mentioned in chapter four only 187 respondents have access to remittance. But 100% remittance sent by internationally migrated family members are in informal ways. But The author of this paper believes that Ethiopia and RSA have long and important historical relationship. Taking this historical tie as an opportunity, it is recommended that agreements made between the two countries in relation to human movement to RSA from Ethiopia.

The remittances sent by migrants from RSA to their families are subjected to illegal many transferers and they take their portion from the total amount and the remaining balance only reached the families. So, the two countries responsible government officials must work on the aspects of the human movement and sending remittance in legal and formal way. The Ethiopian government also works on minimizing money transferring cost to encourage remittance senders

to use the formal and legal way only. Additionally, it is time for governments to take this issue seriously. For offering rewards that will encourage family transfer flows. Migration-cum-remittances should specifically be included in poverty reduction strategy papers.

Government encourages remittance senders to use only the legal financial medium of the country through facilitating and avoiding obstacles in relation to money transferring issues. The other recommendation is that the government and responsible legal bodies must work on intervening remittance receiving rural households to utilize in a wise manner and to invest for their future. Specifically, the government has its own structure called DA (Development Agent). They are assigned by the government to assist farmers in their agricultural activities. They follow the farmers intimately living with them. So, they also work advising and making the remittance receiving households to save and invest and to enhance their livelihood.

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Appendices

Appendix A: Demographic Questionnaires for rural households receiving and not receiving remittance.

Introduction, Confidentiality and Consent

Study Title: The Impact of Remittance on Rural Household Food Security in Misha wereda, Hadiya Zone Ethiopia (Comparative Study)

My name is (*name of the enumerator*) of the enumerator and I am collecting this data on behalf of Teshome Erehincho Ergo, MSc in Food Security and Development student at College of Development Studies of the Addis Ababa University. The author invites you to participate in the study conducted by him from the Addis Ababa University. It is asking you to take part in this study because the author is trying to learn about the impact of remittance on food security on rural households. The information from the interviews will be kept under secure conditions and treated as confidential. The transcriptions will be kept on a PC secured with username and password, and the tape-recorded material will be erased when the thesis is finished. During the project period there will also be used codes to link the transcriptions to the interviewee. Both my supervisor and I will read the transcripts, but I am the only one who will have access to the codes and through this the identity of the interviewee. Information that others might use to identify you will be kept out of the report. Although some participants may come to recognize their own statements, the project ends in July 2022, and then all identifying information will be deleted. In order to participate, you will have to sign a consent form, but you will have the right to withdraw the consent at any time before the thesis is printed. Your honest answers to these questions will help us better understand the existing situation. We would greatly appreciate your help in responding to this survey. The survey will take about 30minut to an hour.

I have received the information and I am willing to take part in the study. I understand that my confidentiality will be respected and that I can withdraw this consent at any time.

_____ _____

Date Your signature

Appendix A: General Information

No.	Questions	Coding categories	Skip Options (Skipto)
101	Gender of the respondent	Male 1 Female 2	
102	Age of the respondent	[_____]	
103	Role of the respondent in the household	Household Head 1 Spouse 2 Child 3 Other (Specify) 4	
104	Marital Status of the respondent	Single 1 Married 2 Divorced/separated 3 Widow 4	
105	Address: Woreda	Misha	
106	Address (Kebele)	Dilbara mago 1 Guna Bonochora 2 Siko 3	
107	What is the highest level of school you completed?	No Education 1 Primary (1-8 class) 2 Secondary (9-12 class) 3 Diploma 4 Other specify [____]	
108	Is there PSNP in your kebele?	Yes 1 No 2	
109	Do you get registered in PSNP in your kebele?	Yes 1 No 2	
110	Is there internationally migrated family member in your household to RSA?	Yes 1 No 2	
111	If yes, How many family members are migrated to RSA?	One 1 Two 2 Three 3 Four 4 More than four 5	
112	What do you think the reason for international migration of your family member to RSA?	Political 1 Economical 2 Poverty 3 Social Pressure 4 Community Influence 5 Migrant link and communication 6 Other (specify) 7	

113	How long your internationally migrated family member stayed in RSA	Less than 5years 1 5 to 10 years 2 15 years 3 Greater than 15 years 4 Other (specify) 5	
114	Do you get assistance from your Internationally Migrated family member/s from RSA in the form of Remittance	Yes 1 No 2	
115	If yes, what type of assistance do you get from Internationally Migrated family member/s?	Irregularly sent cash 1 Monthly cash 2 Business start-up cash 3 Business start-up in kind 4 School materials/uniform in kind 5 Cash for school material/uniform 6 Cash for Food assistance 7 Medical assistance 8 Other (specify) 9	
116	If there is monthly cash, please indicate the monthly amount *(it should be converted into yearly base)* ***maX12***	[_____]	
117	If there is irregularly cash sent from Internationally migrated family member, please indicate the amount *(it should be converted into yearly base)* ***maX12***	[_____]	
118	What skills do you have other than agricultural activities?	Woodwork 1 Barbary 2 Masonry 3 Carpentry 4 Painting 5 Tailoring 6	
119	Off –farm activities to support food issues of the household yearly average	Income from Informal small business [_____] Income from Labor work (Daily laborer) [_____] Income from Renting pack animals [_____]	
120	How much money you expend on food from remittance you receive from IMFM	Less than 20,000ETB 1 21,000-40,000 2 41,000-60,000 3 61,000-80,000 4 81,000-100,000 5	

121	In which areas you expend remittance other than food purpose?	Buying or constructing house for IMFM	1	
		Buying car for IMFM	2	
		Covering the cost of other MFM	3	
		Covering School fee of the FM in private college	4	
		Settlements of credit borrowed for purpose of migration	5	
		Saving	6	
		Small business start up	7	
122	What is the labor force status of the household?	Not applicable	0	
		Working full time	1	
		Working part time	2	
		Temporarily not working	3	
		Un employed laid off	4	
		Retired	5	
		School	6	
		Keeping house	7	
123	Is Livelihood of the household improved after accessing remittance?	Dull	1	
		Routine	2	
		Exciting	3	
		Do not know	4	
		No answer	5	
124	The importance of remittance for petty trade as startup capital for your food security assurance	Not applicable	0	
		One of most important	1	
		Very important	2	
		Somewhat important	3	
		Not too important	4	
		Not at all important	5	
		Do not know	6	
		No answer	7	
125	Number of hours worked last week	Not applicable	1	
		Don’t know the exact time	2	
		The whole days of the week	3	
		About 54hrs except Sunday	4	
		No answer	5	
126	Your satisfaction in agricultural engagement (being farmer)	Very satisfied	1	
		Satisfied	1	
		Good	2	
		Not very satisfied	3	
		No other option than agriculture	4	
127	Number of brothers and sisters living same area (community)	4	1	
		6	2	
		8	3	
		10	4	
		12	5	
		Greater than 12	6	

128	Are you sharing remittance with your siblings living in similar community?	Once a year 1 Twice a year 2 Four times a year 3 In special social occasion only 4 Not at all 5	
129	Total household income in ETB in a year	[_____]	
130	Your status of livestock (converted in to TLU)	[_____]	
131	What kind of market information do you have to properly use your resource for trading food items and other?	Negligible 1 Very less 2 Less 3 Enough 4 Full 5	

Appendix B: HFIAS Questionnaire

NO	QUESTION	RESPONSE OPTIONS	CODE
1.	In the past four weeks, didyou worry that your household would not have Enough food?	2= No (skip to Q2)1=Yes	….|____|
1.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|
2.	In the past four weeks, were you or any household member not able to eat the kinds of foods youpreferred because of a lack of resources?	2= No (skip to Q3)1=Yes	….|___|
2.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|

3.	In the past four weeks, didyou or any household member have to eat a limited variety of foods due to a lack of resources?	2= No (skip to Q4)1= Yes	….|___|
3.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|
4.	In the past four weeks, didyou or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain othertypes of food?	2= No (skip to Q5)1= Yes	….|___|
4.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|
5.	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	2= No (skip to Q6)1= Yes	….|___|
5.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|

6.	In the past four weeks, did you or any other householdmember have to eat fewer meals in a day because there was not enough food?	2= No (skip to Q7)1= Yes	….|___|
6.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|
7.	In the past four weeks, was there ever no food to eat of any kind in your householdbecause of lack of resources to get food?	2= No (skip to Q8)1= Yes	….|___|
7.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|
8.	In the past four weeks, didyou or any household member go to sleep at night hungry because there was not enough food?	2= No (skip to Q9)1= Yes	….|___|
8.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|

9.	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	2= No (questionnaire is finished)1= Yes	….|___|
9.a	How often did this happen?	1= Rarely (once or twice in the past fourweeks) 2= Sometimes (three to ten times in the pastfour weeks) 3= Often (more than ten times in the past four weeks)	….|___|

Appendix C: Coping Strategy Index (CSI)

S/N	Coping Strategies (In the past 7 days, if there have been times when you did not have enough food and don't have enough money to buy food, how often has your household had to	Frequency (no. of days a household experienced the following coping strategies in the past7 days)	Universal Severity Weight	Weighted Score = Frequency x Weight
A	**Dietary Change Strategy**			
1	Rely on less preferred and less expensive foods?		1	
B	**Increase Short-Term Household FoodAvailability**			
2	Borrow food, or rely on help from a friend orrelative?		2	
3	Purchase food on credit?		2	
4	Gather wild food, hunt, or harvest immature crops?		4	
5	Consume seed stock held for next season?		3 but 0**	
C	**Decrease Numbers of People**			
6	Send household members to eat elsewhere?		2	
7	Send household members to beg?		4	

D	Rationing Strategies			
8	Limit portion size at mealtimes?		1	
9	Restrict consumption by adults in order for smallchildren to eat?		2	
10	Feed working members at the expense of non-working members?		2	
11	Reduce number of meals eaten in a day?		2	
12	Skip entire days without eating?		4	
	Total			

Appendix D: FGD and Key Informant Interview (KII) Guide

Dear Respondent,

My name is Teshome Erehincho, M.Sc. in Food Security and Development Study student at College of Development Studies of the Addis Ababa University. The purpose of this research is to understand the **The Impact of Remittance on Rural Household Food Security in Misha Woreda, Hadiya Zone Ethiopia (Comparative Study)**. Specifically, the selected kebeles are DilbaraMago, Gunna Bonochora and Siko. The overall research consists of survey of selected households who have internationally migrated family member and focus group discussions and key informant interviews to collect primary data while secondary data review will be conducted in order to understand the research subject in depth. The main objective of this key informant interview is to collect primary data from individuals who have in-depth understanding of the food security situation and the general context of recipient of remittance and non-recipient of remittance rural households in selected study areas. Therefore, as a key informant interview, I believe that you will provide relevant information that will contribute to the success of this research which will be used by the academic community for further study. In addition, the research findings will be used to inform government and non-governmental organizations strategies and program development. Your answers will be held completely confidential and will not be shared with third parties and you will not be identified by name in any way. If you do not have to answer any questions that you do not want to answer, and you may end this interview at any time you want to, you are free to

do so. However, your responses to my questions are valuable, and will help us better understand the existing situation. We would greatly appreciate your help in responding to this interview which will take about 30 minutes. Would you be willing to participate knowing that you will be doing so voluntarily and there will not be any monetary returns?

Thank you in advance and please "tick" one of the boxes below.

- I agree ◯ I disagree ◯

1. What are the major challenges of socio-economic aspect you are facing?
2. What is your knowledge of the major income sources for rural households in your kebele?
3. In case of food shortage or lack of enough money to buy food, what would you think rural household in your kebele strategies would be? Who practices these coping mechanisms among the family members?
4. Are rural households integrated to the national system, example the rural Productive Safety Net Program (PSNP)?
5. Are there any international migrants in your family? How many are there?
6. How long they stay in RSA?
7. How is your communication with internationally migrated family members?
8. Have you received remittance in terms of money or in kind?
9. What has changed in your livelihood after sending the family member to RSA and receiving remittance?
10. How many times receive remittance from migrant family members in a year?
11. What do you do in the amount of money sent from RSA?
12. What is the status of food insecurity among rural households in your kebele after sending family member to RSA?
13. What would you recommend improving the food security situation of rural household inyour kebele?

14. What is the major improvement of your livelihood after sending your family member to international migration?

Thank you very much for your time and professional contribution to the study!

Teshome Erehinchco, M.Sc. in Food Security and Development, College of Development Studies, Addis Ababa University, Email address teshomeerehi2018@gmail.com Mobile numbers: +251-911890783

Appendix D: Key Informant Interview guide

The interview lasted no more than 30 minutes. Although we don't foresee any hazards from your involvement, you always have the option to end the interview and leave the study at any moment. We appreciate your consenting to the interview as part of the research study. We need this permission form to make sure that you understand the reason for your participation and that you accept the terms of it. Would you kindly read the information document that is included before signing this form to confirm that you agree to the following:

You will receive the transcript of the interview and have a chance to review it for factual errors. The transcript of the interview will be analyzed by (Teshome Erehincho Ergo) as the research investigator. Only the author and the advisor will have access to the transcript. Any summary interview content or direct quotations from the interview that are made available through academic sources will be cited as sources.

1. What are the main socioeconomic issues you are observing in this kebele?
2. What is the main pushing and pulling factors in international migration?
3. What are the food security situations of your kebele?
4. Why do people mostly migrate to RSA? What is the secret behind?
5. What are the contributions of religious leaders in the process of international migration?
6. How do they utilize the amount of money they get from IMFM?
7. Is there any support from your administration to the household for those who have received remittance?
8. Do you believe that the household those who receive remittance are food secure?
9. Can you clearly observe the livelihood in relation to food security between remittance receiving and not-receiving households?

10. How can you explain the food security situation of remittance receiving households?
11. Can you conclude that remittance makes a difference in the livelihood of receiving households than non-receiving households?

I agree  I disagree. 

Thank you!