THE IMPACT OF COFFEE AND TEA EXPORTS ON RURAL LIVELIHOODS:

EVIDENCE FROM PRICE BENEFICIARIES IN NYAMAGABE

AN

INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD) PROJECT

AN INTERNSHIP REPORT ON PROJECT RURAL INCOME THROUGH EXPORTS (PRICE)

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EXECUTIVE SUMMARY

The Global Masters in Development Practice based at the Earth Institute of the University of Columbia New York, United State in collaboration with International Fund for Agricultural Development (IFAD) commenced a graduate Win-Win Field Practicum Grant for student undergoing a study in development practice at all the Partner University of which University of Ibadan is the only partner university in Nigeria.

The International Fund for Agricultural Development (IFAD), an international financial institution and a specialized agency of the United Nations is dedicated to eradicating poverty and hunger in rural areas of developing countries. In Rwanda, IFAD has about three projects, one of which is the Project Rural Income Through Exports (PRICE), in partnership with the Ministry of Agriculture and Animal Resources (MINAGRI) which is part of Rwanda's Government's efforts to reduce poverty and improve living conditions in the rural areas. The overall development goal of PRICE is to raise smallholders' farmers' income. The overall objective of the project is sustainable increased returns to farmers from key export-driven agricultural value chains through increased volumes and quality of production, improved marketing and effective farmer organizations. It is based on the proven export crops of coffee and tea, the upcoming export crop of silk, and horticultural crop principally for local and regional markets. It aimed at working with some 128 700 farming households, including some 72 400 coffee farmers, 14 300 tea farmers, 1 600 farmers producing raw silk and about 7 200 horticultural producers.

This study focused on assessing the impact of Coffee and Tea exports on the rural livelihood: Evidence from PRICE beneficiaries in Nyamagabe. This study worked with the cooperatives of tea and coffee as their members were the beneficiaries of the PRICE intervention. The services provided by the PRICE intervention include Trainings, Seedlings, Matching Grants, Loan/Guarantee, and Plantation and maintenance. The objectives of the study are:

i. To assess the impact of PRICE on agricultural productivity and income generation

ii. To examine the improvement in social services accessed by beneficiaries.

iii. To assess the improvement in physical and financial assets acquired by beneficiaries.

iv. To assess how beneficiaries, adapt to shocks.

Purposive and simple random sampling techniques were employed in selecting 370 households from the two benefitting cooperatives. 180 from the coffee cooperative and 190 from the tea cooperative. Of the 370 copies of the questionnaire administered, 352 (163 from coffee and 189 from tea) were retrieved and used for the study. Data for the study were obtained from primary source using interview schedule guided by structured questionnaire. In depth interviews and Focus Group Discussion were also held with officials of the cooperatives and MINAGRI to further gather data and deepen the understanding on different aspects of the study. Descriptive statistics such as frequencies, percentages, and charts, were used for data analysis.

The results of the study showed clearly showed a significant improvement in the livelihood of the farmers including physical and financial assets. The Government of Rwanda, IFAD and MINAGRI will do well to continue this program as its effect definitely has a very positive impact in the lives of the beneficiaries. A lot can also be done to assist the farmers to overcome their challenges in terms of vulnerability context.

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CHAPTER ONE

1.1 INTRODUCTION and PROBLEM STATEMENT

It is estimated that in 2005 there were 2.6 billion people living in poverty, that is, on less than US$2 per day, and about 1.4 billion people living in extreme poverty, that is on less than one US$1.25 per day (World Bank 2011). Estimates of the proportion of the world's poor that live in rural areas vary but for 2005 this was estimated at 70% (with just 55% of the world's total population living in rural areas) (IFAD 2010). It is further predicted that, despite urban migration, a little over one-third of the world's population will live in rural areas by 2030, just under two-thirds of the world's poor people will still be rural by 2030, and both poverty incidence and depth of poverty will continue to be greater in rural areas. Such global figures hide large regional and national variations but nevertheless emphasize the magnitude of global poverty, and rural poverty in particular.

The first two goals of the Sustainable Development Goals (SDGs) is to eradicate extreme poverty and hunger by 2030. It is clear that achieving this goal requires special emphasis on reducing rural poverty. Other SDGs concern reducing infant mortality and improving health care and educational provision. Rural people tend to be dispersed and remote, and these features, among many, present particular challenges for progress towards many of the SDGs.

Agriculture is an important source of livelihood for the majority of rural people. It is estimated that 2.5 billion of the developing world's 3 billion rural inhabitants are in households involved in agriculture, with 1.5 billion of these in smallholder households (World Bank 2007). (It should also be noted that all households have links with agriculture through their consumption of food, with poorer people spending a higher proportion of their income on food.

In the developing world, agriculture plays a critical role in the entire life of the economy. It remains the backbone of economic system of developing countries. In addition to providing food and raw materials to the industrial sector, agriculture is the main source of livelihood of majority of rural population, providing employment opportunities to a very large percentage of population. For the 70 percent of the world's poor, who live in rural areas, agriculture is the main source of income and employment (www.worldbank.org/ Agriculture & Rural Development | Data - The World Bank).

In Rwanda, the government has a good governance and political will to develop the agricultural sector as it is being the economic backbone of the country by employing about 80% of the population, contributing 32-34% to the national GDP and generating about 70% of the total export. It also provides 90% of national food needs (RAB, 2013).

Since agriculture has been identified as one of the major ways of combating rural poverty, authors, such as Govereh and Jayne (2003), have argued that the livelihood situation which affects small-scale rural farmers, can be overcome if they change their agricultural strategy. A change from subsistence food crop farming to cash crop farming is necessary. These authors suggest that cash crops can be used as a means of generating income for farmers and thus, this will enable them to buy the food crops they require, instead of attempting to produce all the food crops they need on their depleted and/or degraded land.

Cash and export crops such as coffee and tea have the potential to generate substantial income for poor farmers and generate employment in rural areas. It has been a major exchange earner for the country and accounts for 60% of its exports. In order to improve the lives of rural farmers and the country in general, these commodities are considered key. From 2010 to November 2016, export values in $ USD were $425,368,558 for coffee, and $345,688,572 for tea.

Given that Rwandan coffee and tea are major earners for the country, it is expected that there will be a significant improvement in the livelihoods of the rural farmers that grow it. Albeit, this is not exactly the case. Rural farmers have often reported low productivity and production, unpredictable climate changes, inadequate storage and processing, market uncertainties, and access to finance becomes very limited. They live in precarious conditions, threatened by lack of income, shelter and food, medical services, education of their children and other basic needs. To overcome poverty and be able to improve their livelihoods, they need to borrow money for investing in their lands exploitation, making savings to protect their families against risks.

These challenges have led to intervention projects from International organization in partnership with the government of Rwanda (Ministry of Agriculture and Animal Resources) to see how the rural livelihoods can be improved towards achieving the Sustainable Development Goals by 2030. One of the interventions is the Project Rural Income Through Exports (PRICE), which involves the establishment of pro-poor cash crop value chains involving smallholder production and early transformation in partnership with private operators. It is mainly be based on the

proven export crops of coffee and tea, the upcoming export crop of silk, and horticultural crop principally for local and regional markets. PRICE design and in particular the targeting of the project is intended to address these constraints to production and mitigate risks so as to maximize the benefits for the poor. Given this background, this study aims to assess the impact of coffee and tea exports on rural livelihoods using beneficiaries of PRICE in the southern province of Nyamagabe as evidence.

1.2 OBJECTIVES OF THE STUDY

The general objective is to assess the impact of coffee and tea exports on rural livelihoods in Nyamagabe, using PRICE beneficiaries as evidence.

The specific objectives are:

v. To assess the impact of PRICE on agricultural productivity and income generation

vi. To examine the improvement in social services accessed by beneficiaries.

vii. To assess the improvement in physical and financial assets acquired by beneficiaries.

viii. To assess how beneficiaries, adapt to shocks

1.3 JUSTIFICATION OF THE STUDY

The significance of this study cannot be over emphasized. Goal 1 of the Sustainable Development Goals is **NO POVERTY**. Poverty is still a major feature of most developing economies, especially rural poverty, in which Rwanda is no exception.

The government of the country has over the years made policies to improve the livelihoods of the rural inhabitants with intervention projects such as *PRICE* being one of the interventions to increase rural income. It is therefore necessary to review the impact of the project intervention over the years to with a view to assessing how major export crops such as coffee and tea could help to reduce the incidence of poverty through capacity building of all level of beneficiaries.

It is also necessary to understand the challenges faced by the beneficiaries and see how policies or further intervention projects can be developed so as to enhance the productive capabilities and welfare of a largely distressed/ vulnerable segment of the population and achieve Goal 1 by the year 2030.

1.4 SCOPE OF THE STUDY

The scope of the study is the Nyamagabe district, Southern Province, Rwanda. This is because in terms of the geographical distribution of the target livelihood profiles, about 37% of the low-income agriculturalists appear to be more frequently found in Nyaruguru-Nyamagabe. The impact analysis also only covers beneficiaries of the project. The time frame covers the period of the project 2011-2018.

1.5 OUTLINE OF THE STUDY

The study will be divided into five chapters. Chapter 1 introduces the topic and the problem statement. Chapter 2 deals with the background of the study, Chapter 3 covers the conceptual framework, methodology and analysis of objectives. Chapter 4 deals with the discussion of results. Chapter 5 deals with summary, recommendation and conclusion of the study.

CHAPTER TWO

BACKGROUND TO THE STUDY

2.1 A QUICK OVERVIEW OF RWANDA

Rwanda, is a sovereign state in Central and East Africa and one of the smallest countries on the African mainland. Located a few degrees south of the Equator, Rwanda is bordered by Uganda, Tanzania, Burundi and the Democratic Republic of the Congo. Rwanda is in the African Great Lakes region and is highly elevated; its geography is dominated by mountains in the west and savanna to the east, with numerous lakes throughout the country. The climate is temperate to subtropical, with two rainy seasons and two dry seasons each year.

The population is young and predominantly rural, with a density among the highest in Africa. Rwanda's economy suffered heavily during the 1994 genocide, with widespread loss of life, failure to maintain infrastructure, looting, and neglect of important cash crops. This caused a large drop in GDP and destroyed the country's ability to attract private and external investment. The economy has since strengthened, with per-capita GDP (PPP) estimated at $2,090 in 2017, compared with $416 in 1994. Major export markets include China, Germany, and the United States.

Rwanda is a country of few natural resources, and the economy is based mostly on subsistence agriculture by local farmers using simple tools. An estimated 90% of the working population farms, and agriculture constituted an estimated 32.5% of GDP in 2014. Farming techniques are basic, with small plots of land and steep slopes. Since the mid-1980s, farm sizes and food production have been decreasing, due in part to the resettlement of displaced people. Despite Rwanda's fertile ecosystem, food production often does not keep pace with population growth, and food imports are required.

Coffee and tea are the major cash crops for export, with the high altitudes, steep slopes and volcanic soils providing favorable conditions. Reports have established that more than 400,000 Rwandans make their living from coffee plantation. Reliance on agricultural exports makes Rwanda vulnerable to shifts in their prices.

Table 2.1: General Information about Rwanda.

Geographical Indicators	
Latitude	1004"S 2051"S
Longitude	28045"E 310015"E
Total surface area	26,338 km2
Area under land	24,210 km2
Area under water and swamps	2,120 km2
Temperature	19.84^0C
Rainfall	1,230.73 millimeters
Economic indicators	
GDP at current market prices (2016)	**6,618 (Rwf Billions)**
GDP Per capita at current market prices (2016)	**729 (USD Dollars)**
GDP growth rate at current (base year 2014) market prices	**11%**
GDP growth rate at constant (base year 2014) market prices	5.9%
Contribution of Agriculture to GDP at current market prices in 2016	30%
Access to improved drinking water (EICV4)	85% (2013/14)
Primary source of lighting as electricity (EICV4)	19.8% (2013/14)
Demographic and Social-Economic Indicators	
Size of the Resident Population (4th Population and Housing Census Projection)	**11,262,564 (in 2015)**
Urban population (4th Population and Housing Census Projection) Medium scenario	3,294,424 (in 2017)
Rural population (4th Population and Housing Census Projection) Medium scenario	9,462,201(in 2017)
Density of the urban population (4th Population and Housing Census Projection)	2,535 in 2017
Sex ratio of the population (EICV4 (2013/14))	91.6
Population density (4th Population and Housing Census Projection) medium scenario	467 people/km2 in 2017
Infant Mortality rate (DHS 2014/15)	32 per 1,000
Maternal mortality rate (DHS 2014/15)	210 per 100,000 live births

2.2 SITUATIONAL ANALYSIS OF RURAL LIVELIHOODS IN RWANDA

Rwanda is a small, landlocked, resource-poor country with a population of more than 11.2 million (2016 estimate). The population density has more than doubled since 1978 from 183 inhabitants per square kilometer (km^2) to 445 inhabitants/km^2 in 2016. Population density in the country is the highest in Africa. The annual demographic growth rate is 2.6 per cent and the population is expected to increase to about 14.6 million by 2025.

From a tragically low starting point in 1994 following the genocide against Tutsi, in two decades, Rwanda has achieved impressive economic results. Gross domestic product (GDP) has rebounded with an average annual growth of 7 to 8 per cent in the past ten years while inflation has been reduced to single digits. This successful performance was driven by stable macro-economic and market-oriented policies, improved regulatory frameworks and relatively transparent interactions between government and private sector. A strong anti-corruption policy has increased business confidence.

While there has been a decline in poverty over the past few years, Rwanda still remains a low-income country with annual per capita income of US$644 in 2012, and more than 45 per cent of the population lives below the national poverty line. Despite Rwanda's fertile ecosystem, food production often does not keep pace with demand, requiring food imports. Rwanda is ranked 167th out of 186 countries in the United Nations Development Program's 2013 Human Development Index and 76th out of 148 countries in the Gender Inequality Index (GII).

About one in four rural households lives in extreme poverty. The poverty rate is highest in rural areas, where 83.5 per cent of the country's population lives. The percentage of people living in poverty in rural areas is 49 per cent compared with 22 per cent in urban areas. Poverty is highest (76.6 per cent) among households (often landless) who obtain more than half of their income from working on other people's farms.

Agriculture remains the backbone of the economy, accounting for one third of GDP in 2012 and generating about 80 per cent of total employment. Although a great part of GDP growth of the past ten years can be attributed to improved performance in agriculture, the sector still remains very fragile. Production units are very small, agriculture techniques are still based on rain-fed

production systems with less than 6 per cent of cultivated land currently irrigated, and agricultural production is still largely for subsistence only. The main food crops include sorghum, banana, beans, sweet potatoes and cassava but, over the past decade, maize, rice, Irish potatoes and fruits and vegetables have emerged as important crops grown by smallholders.

Tea and coffee represent by far the main traditional export crops, providing about 70 per cent of agricultural export earnings. Smallholders hold an average of four to five plots that make up an average land size of 0.59 hectares, thus restricting the ability of rural populations to escape poverty. Family farms are continuously subdivided into increasingly smaller plots, fields are over cropped and marginal lands and pasturelands are converted to arable lands.

The genocide against Tutsi starting in 1994 had a devastating social and economic effect on the country. It led to a change in the country's demographic structure: women today account for about 54 per cent of the Rwandan population, and many households are headed by women and orphans. Households headed by women (29 per cent of the total rural population), households headed by children and households affected by HIV/AIDS are also affected by poverty or are at risk of falling into poverty. Women provide the bulk of labor in the crop sector, but function mainly at subsistence level with insufficient skills, access to markets and control over land and other agricultural services.

The Comprehensive Food Security and Vulnerability Analysis conducted in 2012 by the World Food Programme, in close collaboration with the Rwanda National Institute of Statistics, indicated that one in five Rwandan households had inadequate food consumption and could be considered to be food insecure. In addition, the prevalence of chronic malnutrition (stunting) among children under 5 remains very high (43 per cent) and has been constant over the past 20 years.

Rwanda has a comprehensive vision for improving rural livelihood based on a series of integrated policies and effective institutional reform to enable their implementation. Vision 2020 provides the overarching long-term goal of reducing the poverty rate to 30% by 2020 and attaining a GDP per capita of USD 900. The medium-term objective is a reduction of extreme income poverty from 36.9% (EICV2) in 2006 to 24% in 2012.

Rural economic transformation through the modernization of agriculture is a central objective and targets established are a tripling of agricultural production, a five-fold increase in agricultural exports and a 50% reduction of the population dependent on agriculture. The new Economic Development and Poverty Reduction Strategy (EDPRS) provides the medium-term planning framework for this vision covering the period from 2008-2012.

The EDPRS gives central importance to agricultural development. The Strategic Plan for the Transformation of Agriculture (PSTA II) translates the overall policy goals into a strategic roadmap for the sector aimed at transforming Rwanda's current subsistence farming into market-oriented agriculture. PSTA II has four programs:

(i) improving cultivation practices and soil, water and livestock management;

(ii) promoting producer organization and knowledge systems;

(iii) promoting a favorable entrepreneurship environment for developing high value products for national and export markets; and

(iv) strengthening public institutions and the regulatory framework supporting agricultural development.

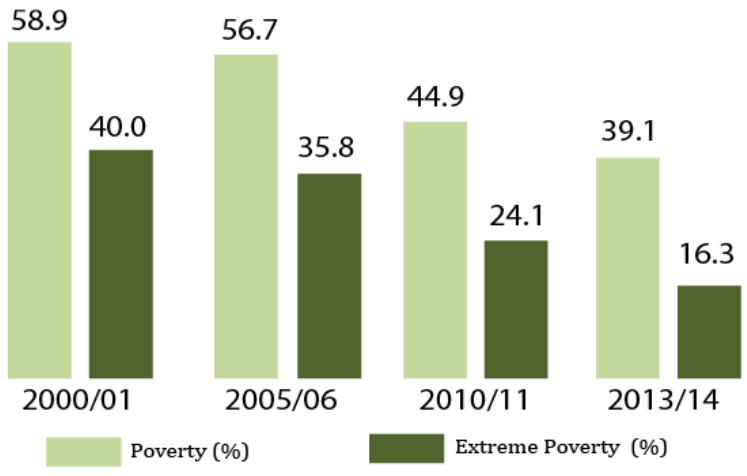


Fig2.1: Poverty and Extreme Poverty **Source: NISR**

2.3 BACKGROUND INFORMATION OF THE PROJECT

2.3.1 INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

The International Fund for Agricultural Development (IFAD) is a specialized agency of the United Nations (UNs), which was established as an international financial institution in 1977 as one of the major outcomes of the 1974 World Food Conference. It resolved that "an International Fund for Agricultural Development should be established immediately to finance agricultural development projects primarily for food production in the developing countries."

One of the most important insights emerging from the conference was that the causes of food insecurity and famine were not so much failures in food production but structural problems relating to poverty, and to the fact that the majority of the developing world's poor populations were concentrated in rural areas.

IFAD is dedicated to eradicating rural poverty in developing countries. Seventy-five per cent of the world's poorest people - 1.4 billion women, children and men - live in rural areas and depend on agriculture and related activities for their livelihoods. Working with poor rural people, governments, donors, non-governmental organizations and many other partners, IFAD focuses on country-specific solutions, which can involve increasing poor rural people's access to financial services, markets, technology, land and other natural resources.

2.3.1.1 IFAD Strategic Framework for 2016-2025

IFAD activities are guided by its Strategic Framework on enabling poor rural people to improve their food security and nutrition, raise their incomes and strengthen their resilience. Agenda 2030 offers clear evidence that IFAD mandate of investing in rural people and enabling inclusive and sustainable transformation of rural areas, notably through smallholder agriculture-led growth, is of absolute global relevance today and over the coming decade.

After several years of growth and reform, IFAD is recognized for its experience, knowledge and performance in this domain; it stands ready to achieve greater impact and it is well positioned to

play a larger role in helping countries fulfil their priorities relative to Agenda 2030. For it to do so, it needs to work in a way that is bigger, better and smarter:

Bigger: by mobilizing substantially more funds and resources for investment in rural areas;

Better: by strengthening the quality of IFAD‟s country programmes through innovation, knowledge-sharing, partnerships and policy engagement; and

Smarter: by delivering development results in a cost-effective way that best responds to partner countries evolving needs.

Goal

IFAD goal is to empower poor rural women and men in developing countries to achieve higher incomes and improved food security.

Objectives

IFAD will ensure that poor rural people have better access to, and the skills and organization they need to take advantage of:

i. Natural resources, especially secure access to land and water, and improved natural resource management and conservation practices.

ii. Improved agricultural technologies and effective production services

iii. A broad range of financial services

iv. Transparent and competitive markets for agricultural inputs and produce

v. Opportunities for rural off-farm employment and enterprise development

vi. Local and national policy and programming processes

All of IFAD decisions - on regional, country and thematic strategies, poverty reduction strategies, policy dialogue and development partners - are made with these principles and objectives in mind. As reflected in the Strategic Framework, IFAD is committed to achieving the Sustainable Development Goals, in particular the target of Zero Hunger and No Poverty.

Partnership

Through low-interest loans and grants, IFAD works with governments to develop and finance programmes and projects that enable rural poor people to overcome poverty. Since starting operations in 1978, IFAD has invested US$14.8 billion in over 900 projects and programmes that have reached some 400 million poor rural people.

Governments and other financing sources in recipient countries, including project participants, contributed US$12.2 billion, and multilateral, bilateral and other donors provided approximately another US$9.6 billion in co-financing. This represents a total investment of about US$21.8 billion.

IFAD tackles poverty not only as a lender but also as an advocate for rural poor people. Its multilateral base provides a natural global platform to discuss important policy issues that influence the lives of rural poor people, and to draw attention to the central role of rural development in meeting the Sustainable Development Goals (SDGs).

2.3.1.2 IFAD's strategy in Rwanda

Since 1981, IFAD has financed 15 rural development programmes and projects in Rwanda, for a total amount of US$239.4 million and directly benefiting about 534,300 rural households. The financing provided by IFAD consists of loans on highly concessional terms; since 2008, full grant funding is based on the Debt Sustainability Framework. The thematic thrusts of IFAD's interventions are considered highly relevant to national development priorities and sector strategies. The IFAD country programme has contributed significantly to improving incomes and food security in rural areas, particularly through watershed development, increased production in irrigated marshland and hillsides, and development of livestock, export crops and rural enterprise promotion.

IFAD's strategy in Rwanda, as documented in its results-based country strategic opportunities programme (COSOP) for 2013-2018, is well aligned with EDPRS 2 and PSTA III, as well as

with the IFAD Strategic Framework for 2011-2015. The results-based COSOP builds on the recommendations of the country programme evaluation and agreements reached with the Government on IFAD's programme for the period 2013-2018.The COSOP's overall objective is to reduce poverty by empowering poor rural men and women to actively participate in the transformation of the agriculture sector and rural development, and by reducing their vulnerability to climate change.

The three interrelated strategic objectives of IFAD's country programme in Rwanda are:

- To sustainably increase agricultural productivity through management of the natural resource base and investments in physical and social capital, including scaled-up agricultural intensification, in order to improve incomes and livelihoods.
- To develop climate-resilient export value chains, post-harvesting processes and agribusiness to increase market outlets, add value to agricultural produce and generate employment in rural areas.
- To improve the nutritional status of poor rural people and vulnerable groups included in the process of economic transformation.

2.3.2 PROJECT RURAL INCOME THROUGH EXPORTS (PRICE)

PRICE is one of the on-going IFAD operations in Rwanda. The project involves the establishment of pro-poor cash crop value chains involving smallholder production and early transformation in partnership with private operators. It will mainly be based on the proven export crops of coffee and tea, the upcoming export crop of silk, and horticultural crop principally for local and regional markets. It will aim at working with some 128 700 farming households, including some 72 400 coffee farmers, 14 300 tea farmers, 1 600 farmers producing raw silk and about 7 200 horticultural producers. The project builds on the Smallholder Cash and Export Crops Development Project (PDCRE) that closed in September 2011.

PRICE has six components; **coffee development, tea development, sericulture, horticulture, financial services and project management**.

OBJECTIVES OF THE PROJECT

The goal of PRICE is to raise smallholders' farmers' income. The overall objective of the study is **Sustainable increased returns to farmers from key export-driven agricultural value chains through increased volumes and quality of production, improved marketing and effective farmer organizations.**

The specific objectives according to the components of PRICE are:

Component 1 (Coffee Development)

i. increasing the production and quality of fully-washed coffee

ii. targeting markets that reward higher quality and ensure equitable returns to farmers

iii. developing capacities to orient and monitor value chain development

Component 2 (Tea Development)

i. building their capacities to produce more and better green leaves;

ii. supporting tea factories in reaching high-value markets; and

iii. Promoting better relations between tea cooperatives and private factories enabling farmers to earn a higher share of the end market price.

Component 3 (Silk Development)

i. progressive set-up of a cost-effective business model for sericulture and basic processing

Component 4 (Horticulture)

i. Assist in the establishment of a sound basis for horticulture development in Rwanda.

Component 5 (Financial services)

i. Providing stakeholders in the supported value chains with adequate and sustainable financial services.

Component 6 (Project management and institutional support)

i. Strengthening government agencies for delivering project outputs and for supporting sustainable value chain development support along viable business models beyond project completion.

2.4 BACKGROUND INFORMATION ON COFFEE AND TEA

2.4.1 COFFEE

Coffee is one of the most important agricultural export commodities for developing countries. It is grown in more than 70 developing countries, with more than 25 million small farmer families world-wide growing a majority (varying from 50 to 90% in each country) of the production in most of these countries. More than 50 countries are significantly reliant on coffee for small farmer incomes and for national growth and development.

Of the two main coffee types Arabica and Robusta, Arabica accounts for over two thirds of global demand. The flavorful nature of the Arabica coffee, as also its aromatic properties, is generally preferred by roasters and consumers over the Robusta variety. Vietnam is the largest producer of Robusta coffee, while Brazil is the largest producer of Arabica coffee. The world's largest producers of coffee are Brazil, Vietnam, Indonesia and Colombia. The largest coffee importers are the United States, the EU (led by Germany and Italy) and Japan.

The production of coffee in East Africa is 13% of the global market, though this region has half the world's arable lands suitable for coffee, signifying room for investment and expansion. East African countries primarily specialize in growing Arabica coffee. Kenya and Ethiopia grow only Arabica coffee, while other countries such as Tanzania and Rwanda grow both Arabica and a small quantity of Robusta. Uganda, on the other hand, is the exception, specializing solely in Robusta and is Africa's largest producer of this variety of coffee.

Specialty coffee: The specialty coffee market has been the most rapidly growing market segment in the industry, growing by 20% in the United States alone. Specialty coffee in the green bean phase can be defined as a coffee that has no defects and has a distinctive character in the cup. It is not only that the coffee doesn't taste bad; to be considered specialty it must be notably good. Key specialty coffee producing countries in the world include Guatemala, Ethiopia, Kenya and Costa Rica.

The specialty coffee market provides attractive returns to small farmers, who are not only able to ensure high quality (and therefore a higher price) for their produce, but are also able to brand and sell directly through 'relationship marketing' to the international market. Direct sales to buyers maximize the price premium for quality, traceability and single origin.

Aggregate price time series do not exist for specialty coffee; however the premium for specialty coffee with respect to normal stays between 20% and 50% per kg.

Obtaining a product that qualifies as a specialty grade requires not only the right climatic conditions and good altitude, but also informed investments in modern cultivation practices, in harvesting, in wet mill and dry mill processing. Selling into this much smaller, fast-growing (15%/year), and highly competitive market implies building good long-term relationships with the specialized brokers that buy on behalf of high-end specialty coffee roasters such as Starbucks, Peet's Coffee and Tea, Rogers Family Companies, Green Mountain Coffee, Sustainable Harvest, Intelligentsia, Counter Culture Coffee, Wholefoods private label, and so on. As such this is a more challenging process than selling ordinary green coffee.

In Rwanda, according to OCIR-Café data, more that 80% of the coffee is grown in high altitude and appropriate soil which makes most of the Rwandan coffee potentially eligible to become specialty coffee, if the correct techniques are applied.

Overview of the coffee export sector in Rwanda

Coffee was introduced in Rwanda in 1904 by German missionaries and was first exported in 1917. Very soon, the major source of external income for the country was from coffee. In 1933, the cultivation of coffee was made compulsory and, in 1963, the government passed laws making it illegal to uproot coffee trees. Considering that coffee played a historical role as a principal source of foreign exchange for the country (about 56% of total exports in the 1990s), the

government was heavily involved in all stages of production, marketing and dry milling. In 1964, the government established OCIR-Café (*Office National des Cultures Industrielles-Café/*Rwanda Coffee Authority) to support the coffee industry, through which it distributed seedlings, chemical fertilizers and phyto-sanitary products and other inputs to growers at practically no cost.

Until 1988, coffee exports were solely carried out by Rwandex, which exported 100% of the coffee. The majority owner of Rwandex was the government, which also set the prices that farmers received for their coffee sales. The second exporter was set up in the year 1984. All prices and marketing margins were fixed by the government. The price so fixed underwent a change only when economic variables (world coffee prices or a change in the exchange rates) affected the producer prices. While this earlier system provided coffee growers with stable prices, it often resulted in a high "tax" on coffee. A Stabilization Fund acted as a buffer fund to maintain fixed producer prices when world prices fluctuated.

Rwandan coffee in the 1990's

In the early 1990"s, the quality of Rwandan washed Arabica coffees was mediocre by world standards, with prices being almost close to those of unwashed or sun-dried coffees, even though 10% of the production was of top quality, fully-washed grades, fetching high premiums above the NY-C futures market levels. Furthermore, Rwandan coffee was not being marketed in the international market as a single origin coffee due to the "potato" off taste that was quite often present in the cup.

Due to low prices after the collapse of the International Coffee Agreement (ICA) in 1989 as well as to the genocide in Rwanda, there were no new investments in the Rwandan coffee industry in the 1990's. Quality deterioration was due to the lack of knowledge on processing techniques, lack of incentive rewarding quality, lack of pulping centers, shortage of proper equipment, lack of drying trays etc., resulting in a complete lowering of quality standards. Thus, Rwandan coffee production fell from 39,600 tons in 1990 to 14,800 tons in 1997. The cultivated area dropped from 52,774 ha with yields of 764 kg/ha in 1991 down to 28,314 ha with a yield of around 497 kilograms/ha.

The situation turned worse after the 1994 genocide, due to the disruption of farm ownership, field production techniques, pulping units and infrastructure. Lower quality and production

resulted in very little interest being evinced by the international coffee market in Rwandan coffees.

Recent Performance of the Rwandan coffee sector

Rwandan coffee industry is dominated by the small-holder-growers. Coffee is grown by around 355,771 farmers and covers more than 35,000 ha. Over the last few years, the good quality of Rwandan coffee stimulated its demand and this contributed to an increase in income for farmers from coffee revenues and as a response is the demand for coffee seedlings to expand coffee plantations. This was accompanied by increase in the processing for specialty coffee and an increase in the number of coffee washing stations to 261 from 189 in 2009.

During the fiscal year 2016-2017, it was targeted to generate 67.8 million USD dollars and a production of 22,650MT by implementing activities that increase coffee production and value addition. The activities centered on gap filling and maintenance of coffee plantations, increasing the fully washed coffee production to 60% through farmer mobilization to deliver cherries to coffee washing stations and improving the management of cooperative owned coffee washing stations as well as promoting the Rwandan coffee in the regional and foreign markets.

Coffee production was attained at 81%, of the target, revenues generated were attained at 86% of the target.

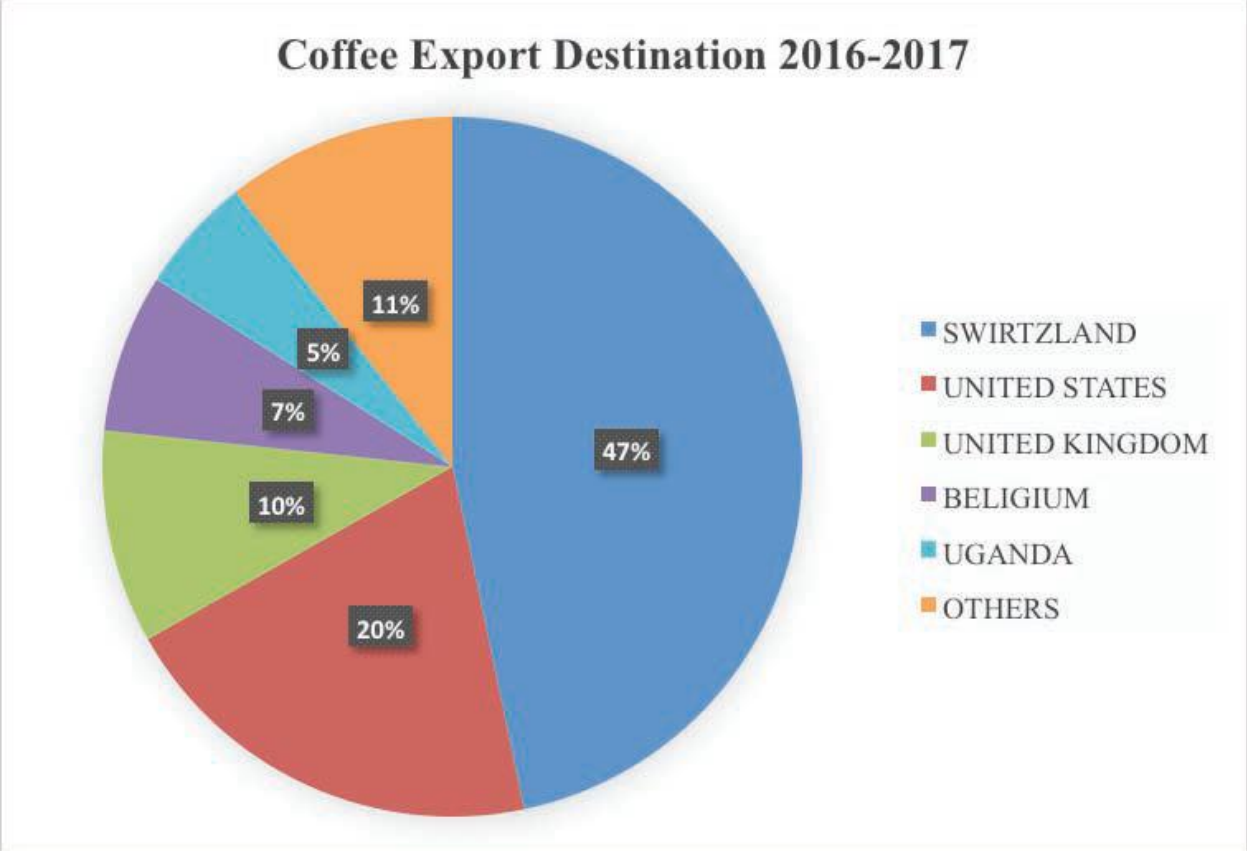
Coffee exports 2016-2017

During the FY 2016-2017, an export database was reviewed and updated, where currently there are 67 exporters. This year, 18 new codes and export licenses for the coffee exporters were issued. Coffee export revenues realized from July 2016 to June 2017 reduced by 3.4% from 60,718,061 in 2015-2016 USD to 58,526,023 USD. This decrease is attributed to the reduction of coffee volumes exported by 5.4% compared to the last year were exports totaled to 19,560,636 kg despite coffee average price in 2016- 2017 being good as $3.16 USD/kg compared to $3.10/kg in 2015/2016

Rwandan Coffee Export destinations

The Rwandan coffee is largely exported to the European market where more than 60% were exported to EU market during 2016-2017. As in the pie chart below 47% of the coffee volumes were exported to Switzerland while 20% to USA, 10% to Belgium, 7% to UK. Other countries from the pie chart represents countries such as Germany, Denmark, Kenya, Norway, Poland, Singapore, South Korea, Canada and Australia that import low volumes.

Fig 2.2 Coffee export destination 2016-2017



2.4.2 TEA

Tea is one of the most popular and lowest cost beverages in the world, next only to water. Tea is consumed by a wide range of age groups in all levels of society. More than three billion cups of tea are consumed daily worldwide. Tea is considered to be a part of the huge global beverage market, not to be seen in isolation just as a "commodity". Africa, South America, the Near East

and especially the Asian regions produces a varied range of teas, this, together with a reputation in the international markets for high quality, has resulted in Asia enjoying a share of every importing market in the world. Huge populations in Asia, Middle East, Africa, UK, EU, consume tea regularly and throughout the day.

Tea has historically been one of Rwanda's top two leading export revenue earners along with coffee (tea made up 34% of Rwandan export revenues in 2002 at USD 23 million). As of 2003, over 52 000 people are employed by the sector, either directly as farmers or tea factory workers.

Tea was first introduced to Rwanda in the 1950s, and control of the industry was dominated by the government until the 2000s, with 9 of the 11 tea factories being run by the state. In 2006 a privatization process was begun, and there are currently 3 government run factories and 8 private factories. In 2002, over 12 000 ha of land were planted with tea. The development of the new 5 greenfield tea sites under private-public arrangements will bring the total land under planting to over 20,000 ha in the coming years, and should increase the number of people employed in the sector to at least 70 000.

Historically, Rwanda has produced almost exclusive black CTC tea, the most common form of tea produced through standard processing equipment. Tea leaves are harvested, then processed using a machine procedure of cutting, tearing and curling, which eventually produces several grades of black CTC tea. Recently, Rwanda has been producing other forms of tea such as green and orthodox, which go through different processing procedures using completely separate processing equipment.

In 2003 a detailed tea industry strategy document was prepared and ratified by Cabinet in 2004. In 2008, the government updated a revision of this original tea industry strategy, based on new primary research into international tea markets, an assessment of the progress in implementing the original strategy, and an analysis of the current key constraints to tea industry growth.

The national tea strategy forecasts an increasing oversupply leading to a likely long-term price decline for bulk black tea, advocating a move into niche tea markets. However, tea prices actually rose to historic levels in 2009 according to FAO, as a result of bad weather in some major tea producing countries. High prices for made tea are not passed on directly to the consumer, as there is intense competition in end markets, resulting in a situation where tea

blenders and packers are very interested in guaranteeing supply of black CTC tea in order to remain competitive. Consumption also rose 3.4% against production for tea as a whole, indicating that the predictions of a long-term tea price decline may not be as dire as once thought.

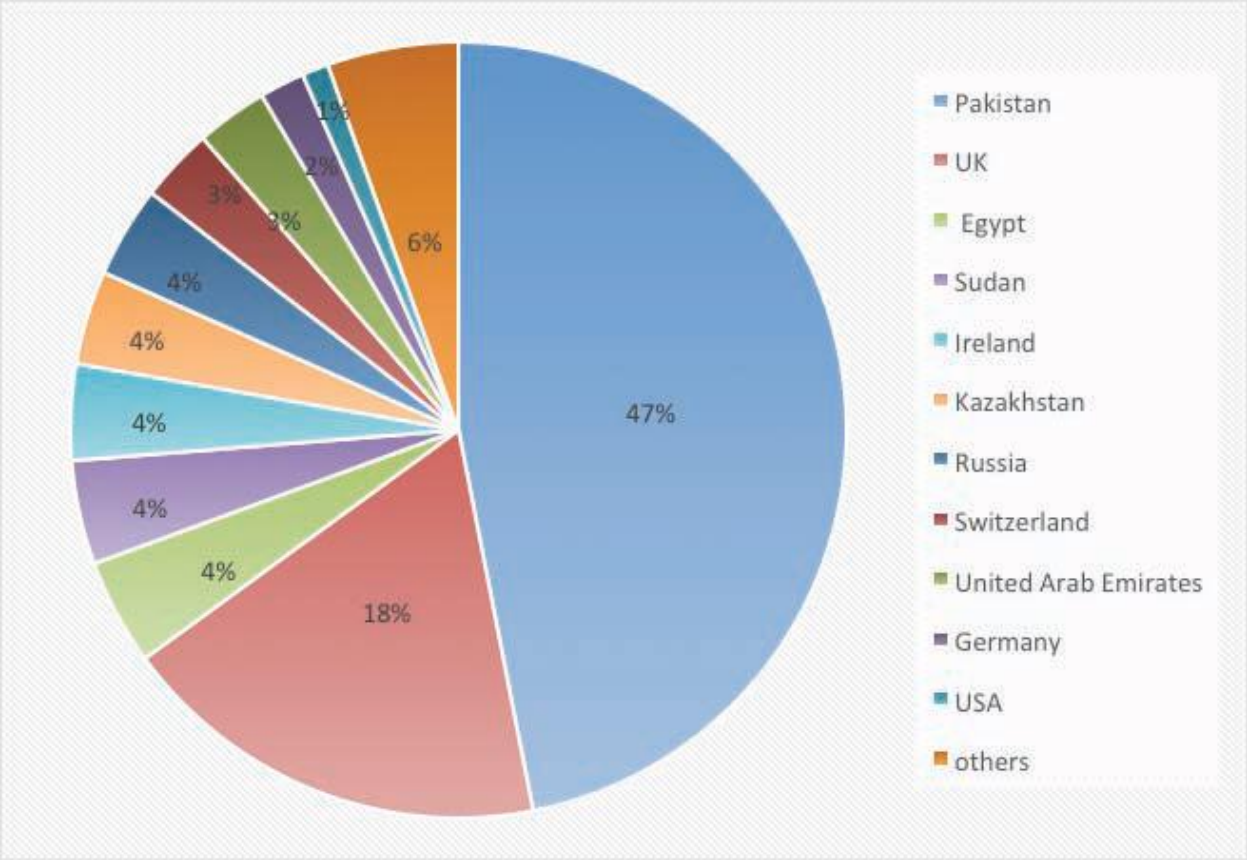
The Rwandan tea production has recently performed well in an upward growth. The tea sector consists today of fifteen tea factories with two supply models from cooperatives and industrial blocks. Around 69% acreage is under growers' cooperatives that are into two categories cooperatives with consolidated tea blocks; the other category is out-growers with scattered individual farmers. The total surface area planted with tea at the end of June 2017 is 26,879.4 ha; however this surface area was generally estimated without appropriate tools. A tea census was conducted during this year and it is expected to give more accurate figures on area planted with tea.

Rwandan tea has been witnessing an increase in production of made tea since 2007, which is mainly attributed to an efficient and integrated agricultural practices such as fertilizer application, gap filling as well as area expanded. The FY 2016-2017, the plan was to increase tea production from 25,410MT to 27,500 tons of made tea, generate USD 75.6 M from the exported teas, and conduct tea expansion under private stakeholders' mobilization, expropriate Rugabano, Munini and kibeho site for private investors, improve tea quality through training of tea pluckers and apply 6500MT of fertilizer.

Rwandan Tea Export destinations

The Rwandan tea is largely exported to the Asian market where more than 60% were exported to Pakistan market during 2016-2017. As in the pie chart below 47% of the tea volumes were exported to Pakistan while 18% was exported to UK, 4% to Egypt, Sudan, Ireland, Kazakhstan, and Russia,3% to UAE and Switzerland, 2% to Germany and 1% to USA. Other countries from the pie chart represents countries such as Denmark, Kenya, Norway, Poland, Singapore, South Korea, Canada and Australia that import low volumes.

Fig 2.3 Rwanda Tea exports by destinations 2016-2017



CHAPTER THREE

CONCEPTUAL FRAMEWORK AND RESEARCH METHODOLOGY

3.1 Introduction

Based on the failures and limitations of the previous conventional development strategies, in the late 1980s the Sustainable Livelihoods Approach (SLA) was developed by several organizations including, the Institute of Development Studies (IDS) at Sussex University and the Department for International Development (DFID), UK. Since its invention, the Sustainable Livelihoods Approach has gained favor in many development orientated organizations including Oxfam, CARE, FAO, UNDP and the World Bank (Hussein, 2002).

This is because this type of approach emphasizes that people's lives are the most important in the process of development, unlike the previous blue-print development that placed emphasis on material things rather than people (Chambers, 1987). The Sustainable Livelihoods Approach goes beyond the traditional understandings of poverty, such as living "on a purchasing power of $ [US] 1.00 a day... and/or to consume less than 2,000 calories per person a day" (Adato & Meinzen-Dick, 2002, p. 6). It looks at poverty from a multi-dimensional point of view and it describes poverty as encompassing not only a lack of income and basic needs - but also personal wellbeing.

The Sustainable Livelihoods Approach has been seen as having the potential to solve rural poverty problems, which previous development strategies had failed to resolve. This approach addresses the wider livelihoods constraints of rural people and it attempts to identify lasting solutions to the problems which affect them.

3.1.1 SUSTAINABLE LIVELIHOODS APPROACH

It is quite clear and widely accepted that the narrow perception of poverty, in terms of deprived income and lack of basic needs is too simplistic. Chambers (1995, p. 8) asserted that any analysis of poverty should start by recognizing that poverty is something greater than just income deprivation and low consumption: poverty is complex. It was not until 1986, when the idea of the Sustainable Livelihoods Approach (SLA) was first mooted during discussion at the 'Food 2000, Brundtland Commission in Geneva', that a workable approach was found. It was during this discussion that the words *sustainable, rural and livelihoods* were used together to refer to a strategy that would later be widely accepted as the most effective way of combating poverty. The outcome of this discussion was a report that outlined a people-centered development strategy that took the realities of the poor people as its starting point: and this was referred to as the Sustainable Livelihoods Approach. Later, in 1987, this approach became the main reference point in a development agenda, during a conference organized by the International Institute for Environment and Development (Scoones, 2009, p. 175).

From this point onwards, donor organizations, such as the Department for International Development (DFID), the United Nations Development Program (UNDP), and non-governmental organizations like Canada America Relief Everywhere International (CARE) and Oxfam, adopted the approach for fighting poverty in developing countries. This approach was regarded as effective compared to other development approaches that emphasized provision of services and infrastructural development, because it placed *people* at the center of development and its success would be determined by the improved livelihoods of poor people (Ashley & Carney, 1999, p. 5).

The concept of the Sustainable Livelihoods Approach was then later popularized following a 1992 publication by Robert Chambers and Gordon Conway that gave sustainable livelihoods a definition, which has for many years been used to refer to this approach. They defined sustainable livelihoods as follows:

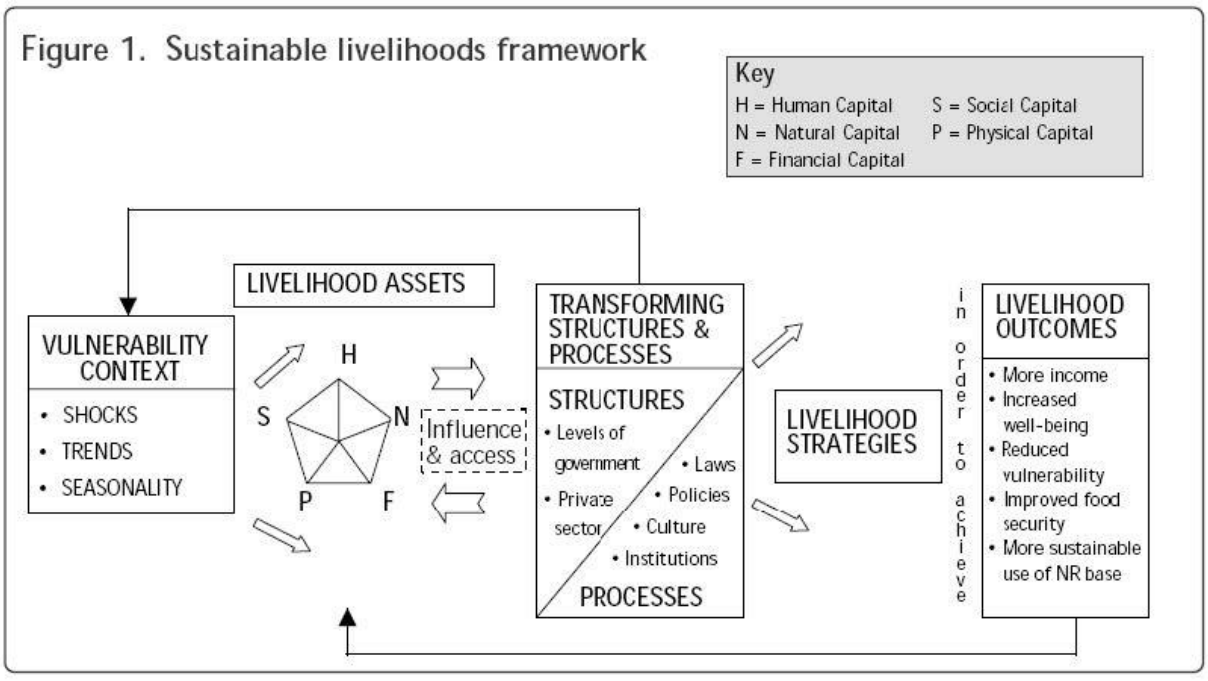
"Livelihoods comprise the capabilities assets including both material and social resources and activities for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks; maintaining and enhancing its capabilities and assets while not undermining the natural resource base."

3.2 The Sustainable Livelihoods Framework

The Sustainable Livelihood Framework (SLF) is a conceptual framework that was originally developed by the Institute of Development Studies at the University of Sussex, as a tool to use in the application of the Sustainable Livelihoods Approach (Scoones, 1998). A similar version of the framework was developed by the UK Department for International Development (DFID), in 1999 (Hussein, 2002). This framework particularly analyses the probable causes of poverty within rural areas, including poor people's access to resources and their diverse forms of livelihood activities.

This framework is intended to broaden people's perspective and understanding of the poor and to be used to assess and give priority to development interventions that would have an impact on the poor (Adato & Meinzen-Dick, 2002). Various organizations have developed their own framework.

However, they all draw from the original framework developed by the Institute of Development Studies (IDS at Sussex University). An example shown below is the commonly used framework developed by the DFID.



Source: DFID 1999.

This framework has several key features: vulnerability context; livelihoods assets; structures and processes; livelihoods strategies and livelihoods outcome (Adato & Meinzen-Dick, 2002, p. 6). In order to understand this framework, it is important to evaluate these key features individually.

3.2.1 Vulnerability context

The vulnerability context refers to factors that occur naturally and which are beyond the control of poor people. These events are categorized as trends in population growth and natural resources and technology (Adato & Meinzen-Dick, 2002, p. 8). Shocks are also classified as vulnerabilities and they include impacts that are unexpected and usually distressing to people, for example, diseases, earthquakes, drought, floods, fires and conflicts (Chambers & Conway, 1992, p. 10). Seasonality in employment opportunities, resource availability, productivity of farming activities and prices in market are also aspects of the vulnerability context, which can have adverse impacts on rural livelihoods (Cahn, 2002).

3.2.2 Livelihoods assets

Assets and capital are central to the Sustainable Livelihoods Framework in the assets pentagon (see Figure 1). These assets represent the resources that poor people have and on which they build their livelihoods. They include both tangible and intangible assets, which are vital to the Sustainable Livelihoods Approach (Chambers & Conway, 1992, p. 7). They are divided into five categories which are discussed in turn below.

3.2.2.1 Human capital (skills, education and, labor)

Human capital represents an important component of the Sustainable Livelihoods Framework. This has been described by Duncombe (2007) as the available skills and knowledge possessed by

rural people in order to pursue their livelihood strategies in life, together with their ability to perform or carry out an income generating activity. This ability to do work is referred to by Ellis (2000) as the labor that can be made available within a rural community or a household to be used in pursuing a livelihood. Therefore, the three aspects of skills, knowledge/education and labor, which form human capital, are essentially important in the livelihoods of poor people. In addition, the exploration of human capital in rural communities also requires information regarding health too, because the health status of household members is vital to the provision of human capital. Only healthy people can contribute to the pursuance of a livelihood, so therefore being healthy is important for people, in order that they can provide labor, education and skills.

These are essential requirements for performing different tasks geared towards achieving a particular livelihood strategy.

Human capital can be categorized into qualitative and quantitative dimensions (Rakodi & Lloyd-Jones, 2002). The quantitative dimension refers to the number of family members in a household or in a community and the available time they have to participate in an income generating activity. The qualitative dimension, on the other hand, encompasses the level of education, skills and health status of the household, or the community being analyzed.

3.2.2.2 Natural capital (land, water and, forests),

Natural capital is defined as resources that occur naturally in the environment. They include resources such as land, water, marine and air and soil quality (Adato & Meizen-Dick, 2002). These resources have been deemed as essential inputs for the poor, because it is from these naturally occurring resources that the rural poor people can derive their livelihoods (Duncombe, 2007). The majority of rural people depend entirely on the status of their natural resource capital for their survival, for example, access to land, water and suitable climatic conditions. Therefore, these aspects play a significant role in the determination and/ or sustainability of rural livelihoods.

3.2.2.3 Financial capital (savings, credit and/or, remittances)

According to the Sustainable Livelihoods Framework, financial capital is defined or described as:

"The monetary income that can be accessed by the people living in rural areas to construct their livelihoods within a range of different livelihoods options available to them. The financial capital commonly available to rural people is comprised of personal savings, micro-credit, remittances, gifts and any other transfers that may have monetary value, which are carried out within rural families' social circles."

(Duncombe, 2007, p. 85).

3.2.2.4 Physical capital (roads, buildings and, energy)

Physical capital is the basic technology, infrastructure, tools and equipment, housing, and household goods (including stocks such as jewelry), which a rural household owns. These are resources that a household can use to supply itself with shelter, transport, energy, water and communication. Physical capital is productive household assets either owned individually by a household, for example, houses, equipment, tools and machinery, household goods and stocks such as jewelry, or they could be productive state-owned assets, for example, infrastructure such as roads, hospitals and schools, which can be used directly or indirectly by households in generating income (Rakodi & Lloyd-Jones, 2002).

3.2.2.5 Social capital (networks, informal safety nets and, membership of organizations)

Within the Sustainable Livelihoods Approach, social capital has been defined as:

"The rules, norms, obligations, reciprocity and trust, which are set within a society's social relationships and structures. This may also include the society's institutional planning, which is responsible for enabling its members to realize either their individual or communal objectives."

(Duncombe, 2007, p. 86)

Lyon (2000) added that social capital also involves features of social organization, which serve to coordinate accomplishments within a society and these features include norms, trust and wider networks that are all geared towards activities which may generate income for its members. Social capital, furthermore, includes information that is passed onto society members through their social networks (Granovetter, 1993).

Shankland (2000) stated that social capital is one of the key resources, as described by the Sustainable Livelihoods Approach, which poor people can utilize and upon which they can build

their livelihoods. Grootaert (1998) went on to identify three levels of social capital relationships within societies.

Firstly, he identifies the horizontal link, which he describes as the relationship that exists between households' groups within a community and this mainly dwells on the virtue of reciprocity. Secondly, he identifies the vertical link, which he describes as entailing a relationship between a more powerful individual in a community and less powerful individuals, and thirdly he identifies the diffuse link which exists between people and groups within a society.

Although the majority of frameworks refer to these five categories of assets, some authors such as Baumann and Subir (2001), have argued that a sixth asset category, political assets should be added to the framework. Political assets are deemed important because they give the poor the right to membership in political parties and the right to citizenship within their country.

Within the Sustainable Livelihoods Framework assets are central to rural people livelihoods. It is through these five key assets that an improvement in peoples' lives can be measured. From the above discussion on each of these assets a positive improvement is essential in all the five assets categories in order to record any form of improved livelihood.

For example, a positive improvement in financial assets is important as it gives people the ability to be financially capable, while human capital improves the rural peoples' knowledge, education, skills and ability to work in terms of labor provision. Natural capital offers the rural people a resource base where they could derive their livelihoods for example, land for farming and clean water for drinking. In addition, physical capital also provides opportunities or infrastructure that rural people can use to generate income to sustain their livelihoods, while the social capital enables the rural people to live in a united society that looks after the welfare of every member in the community.

3.2.3 Structures and processes

Policies, institutions and processes within the framework refer to both formal and informal institutions that are responsible for shaping rural livelihoods (Adato & Meinzen-Dick, 2002).

These institutions play an important role in determining people's access, control and use of assets, in order to sustain their livelihoods (Toner & Franks, 2006). Such structures could include the various levels of the government and the private sector, while the processes may include culture, laws and policies as spelled out in the Sustainable Livelihoods Framework.

3.2.4 Livelihoods strategies

Livelihood' strategies are the multiple activities that poor people can choose, in order to improve their livelihoods, and these activities can enable or assist poor people to survive (F Ellis, 2000). For example, Scoones (1998) identified three strategies that poor people in a rural setting can pursue: agricultural intensification, diversification and migration.

3.2.5 Livelihood outcomes

Livelihood outcomes are possible results of achievement, or indicators of progress that signify wellbeing. The outcomes of Sustainable Livelihoods are centered on improved wellbeing and reduced poverty (DFID, 1999). This can be observed through indicators, such as improved food security; sustainable use of natural resources; strengthened assets base; reduced vulnerability, and "improvement in other aspects such as health, self-esteem, sense of control and even maintenance of cultural assets" (Adato & Meinzen-Dick, 2002, p. 10).

Summary

This chapter has analyzed the Sustainable Livelihoods Approach in relation to its origin and it is evident that this approach has gained popularity and it is widely accepted by major development organizations, as a strategy that, when used in development initiatives, could have a lasting and positive impact on poverty in rural areas. The approach has been credited for its ability to focus on the poorest in society by; giving them an opportunity to participate in development interventions, and determine their own development initiatives. The approach also focuses and stresses on the importance of the five key livelihoods assets of; financial physical, social, natural and human assets that are deemed vital in rural livelihoods.

While the SLA should not be seen as a perfect "model" for development it is chosen above other new approaches to poverty for this study such as Sen's ideas on development as freedom, because it is a pragmatic approach with a framework which can readily be applied to rural livelihoods contexts.

3.3 RESEARCH DESIGN AND METHODOLOGY

3.3.1 STUDY AREA

Nyamagabe is a district in Southern Province, Rwanda. Its capital is Gasaka. The District lies between Butare and Cyangugu in the south-west of Rwanda, and contains much of the former Gikongoro Province, which was disbanded in 2006. It also contains the eastern half of Nyungwe Forest, a popular tourist destination, being one of the last remaining forest areas of Rwanda and home to chimpanzees and many other species of primate.

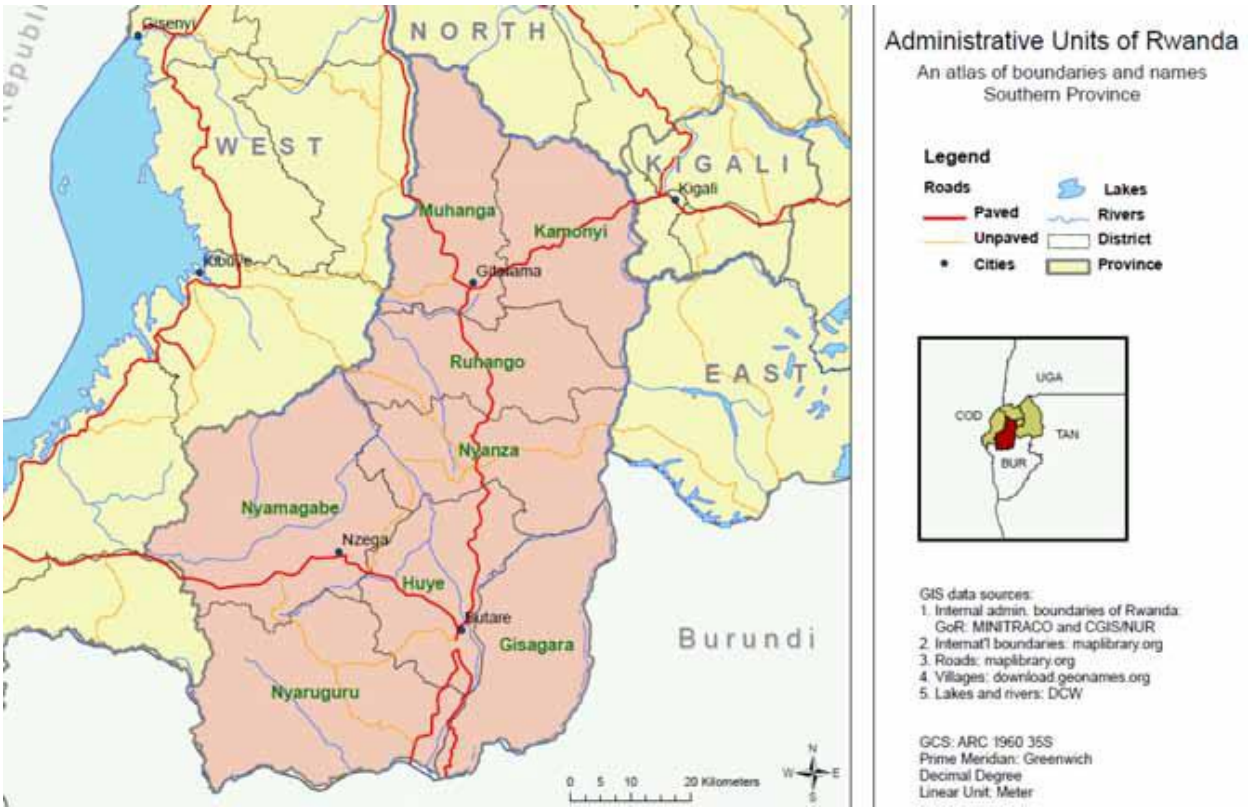


Fig 3.1 Map of Southern Province

Nyamagabe was chosen as a research site because it was classified as one of the districts with the prevalence of the poorest wealth quantile and with the risk of food insecurity.

In selecting the districts for the tea development component, the project selected Greenfield sites for which a private investor is willing to build a factory as well as agree on good terms of trade for tea farmers.

3.3.2 DEMOGRAPHICS

The population of Nyamagabe district is 330,000. The majority are aged 19 years or younger with 54%; people aged 65 years and above make up a small part (4%). More than a half (53%) of the population is constituted of female individuals and the population is predominantly young, with about 80% still under 40 years of age.

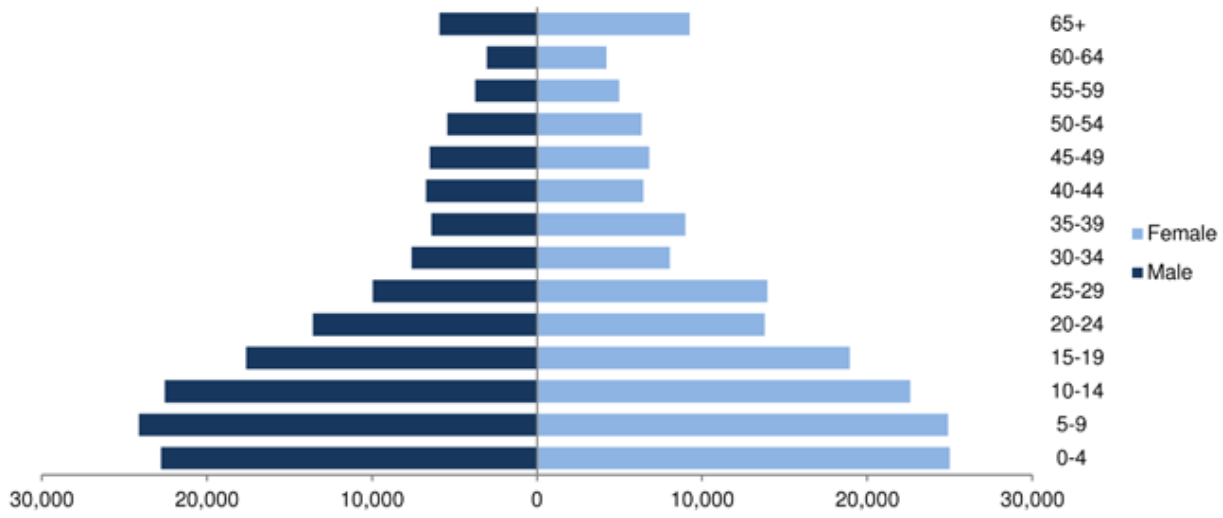


Fig 3.2 Distribution of population in Nyamagabe by age group and sex.

3.4 DATA COLLECTION AND SOURCE OF DATA

The use of Qualitative survey method which are Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) and quantitative survey methods (structured questionnaire

administration) were employed in the study. Multi-stage sampling techniques will be employed. Gatare, Mushubi and Buruhukiro sectors of Nyamagabe constitute scope of field survey. Questionnaire was administered in a survey conducted among the benefitting cooperatives in the district. A total of 360 (that is, 190 for the tea farmers and 170 for the coffee farmers) beneficiaries will be sampled.

The type of data to be collected include: socio-economic data, agricultural productivity, income, and strategies on coping with vulnerabilities. Both secondary and primary data are being used in this research work. The primary data were collected through the use of well-structured questionnaires, and administered by well-trained enumerators in the district. The study covers the only tea co-operatives in Nyamagabe and one of the coffee cooperatives in the district. Secondary data were obtained from the records made available by the PRICE Coordinating centre in Kigali, Rwanda through relevant reviews and publications, text books and publications of the Ministry of Agriculture and Animal resources (MINAGRI), National Agricultural Export Board (NAEB).

3.5 ANALYTICAL TECHNIQUE

Data collected was coded and analyzed using Statistical Package for Social Sciences (SPSS) using descriptive statistics in form of percentages, frequencies, and charts. Percentages were specifically used to (present information in tables and figures) analyze the demographic characteristics of the respondents, improvement in physical and financial asset, while mean scores were used to analyze the productivity of the respondents.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

Introduction

This chapter presents the summary of the analysed data from the study. The results from the administered questionnaires are presented to reflect the socio-demographic characteristics of respondents.

4.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Table 4.1: Distribution of Respondents by Socio-Demographic Characteristics

Socio-Demographic Characteristics of Respondent				
	COFFEE		**TEA**	
	Frequency (N = 163)	**Percentages (%)**	**Frequency (N = 189)**	**Percentages (%)**
Age				

20-29years	16	9.8	9	4.8
30-39years	46	28.2	40	21.2
40-49years	40	24.5	52	27.5
50-59years	28	17.2	45	23.8
60-69years	17	10.4	26	13.8
70-79years	11	6.7	9	4.8
80-89years	1	0.6	1	0.5
90-99years	4	2.5	7	3.7
Educational Qualification				
No Formal Education	14	8.6	42	22.2
Primary	125	76.7	122	64.6
Secondary	23	14.1	18	9.5
Other, specify	1	0.6	5	2.6
Marital Status				
Single	23	14.1	2	1.1
Married	122	74.8	172	91.0
Widow	15	9.2	12	6.3
Divorced	3	1.8	3	1.6
Gender				
Female	65	39.9	37	19.6
Male	98	60.1	152	80.4
Head of Household				
Female	23	14.1	23	12.2
Male	139	85.3	165	87.3

Table 4.1 revealed the socio-demographic characteristics of the respondents. The table reports that majority of the respondents are within the age bracket of 30-39, 40-49 and 50-59 years respectively with percentages of 28.2, 24.5 and 17.2% respectively. Majority of the respondent possess primary education with a percentage of 76.7% (Coffee) and 64.6% (Tea) respectively. Also, large percentage of the respondent are Married with a percentage of 74.8% (Coffee) and

91% (Tea) respectively. While majority of the respondents are Male with a percentage of 60.1% (Coffee) and 80.4% (Tea) respectively. And by extension are the head of household with a percentage of 85.3% (Coffee) and 87.3% (Tea) respectively.

Fig 4.1 HOUSEHOLD SIZE OF PRICE BENEFICIARIES

Fig 4.1a revealed that Female are more with a percentage of 51% as compared to 49% of Male.

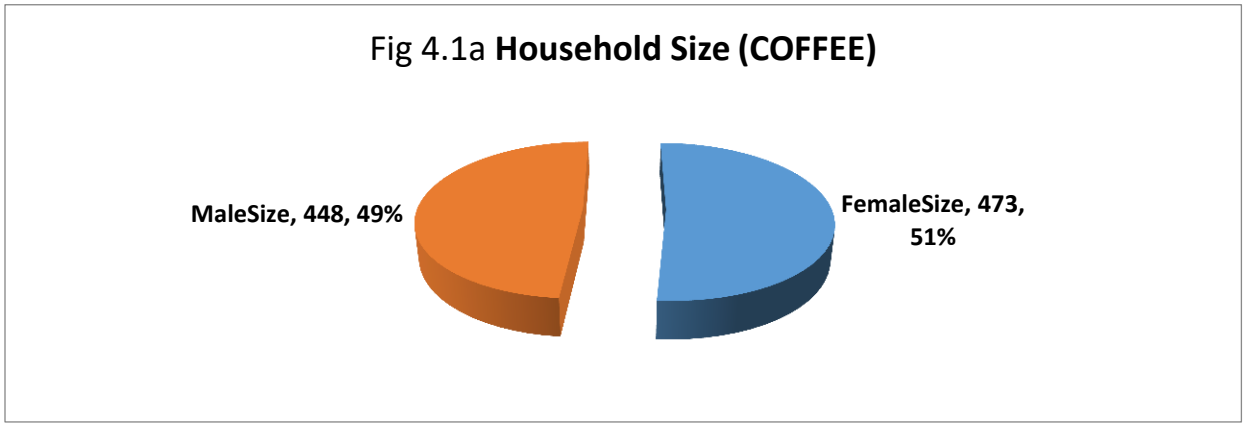
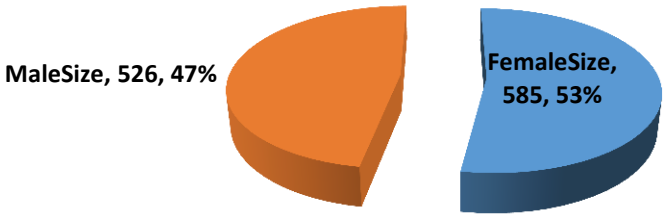


Fig 4.1b revealed that Female are more with a percentage of 53% as compared to 47% of Male.

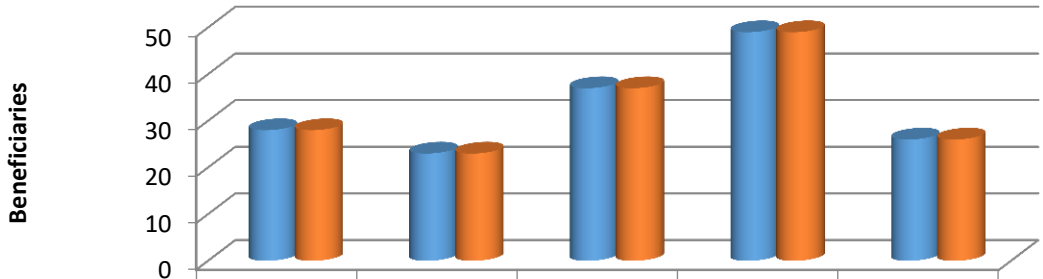
Fig 4.1b **Household Size (TEA)**



4.2 AGRICULTURE PRODUCTIVITY AND INCOME GENERATION

4.2.1 Land size Cultivation: The figure below revealed the hectares of land cultivated by the beneficiaries before and during the implementation of PRICE.

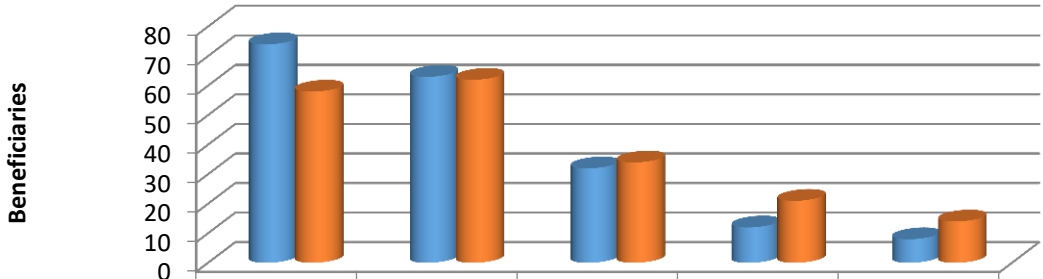
Fig 4.2.1.a **Hectares of land cultivated by PRICE Beneficiaries (Coffee)**



	Below 0.25 ha	0.25 to 0.5 ha	0.5 to 0.75 ha	0.75 to 1ha	Above 1 hectare
Before PRICE	28	23	37	49	26
During PRICE	28	23	37	49	26

As depicted in fig 4.2.1.a above, the same hectares of land was cultivated for Coffee before and during the implementation of PRICE by beneficiaries.

Fig 4.2.1.b **Hectares of land cultivated by PRICE Beneficiaries (TEA)**

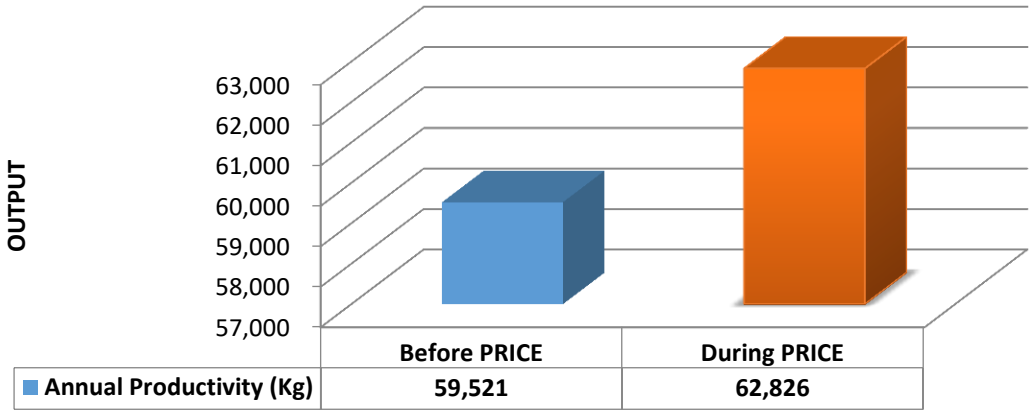


	Below 0.25 ha	Between 0.25 to 0.5 ha	Between 0.5 to 0.75 ha	Between 0.75 to 1 ha	Above 1 hectare
Before PRICE	74	63	32	12	8
During PRICE	58	62	34	21	14

As depicted in fig 4.2.1.b above, more hectares of land are cultivated by beneficiaries for Tea as a result of the implementation of PRICE.

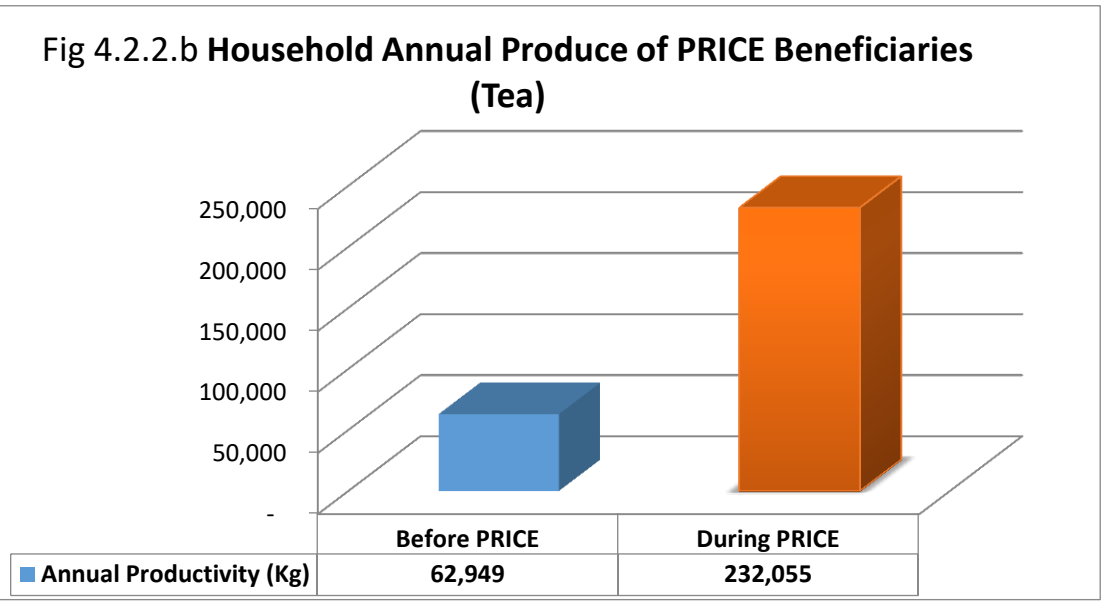
4.2.2 Annual Productivity: The figure below shows the annual productivity of beneficiaries before and during the implementation of PRICE

Fig 4.2.2.a **Household Annual Productivity of PRICE Beneficiaries (Coffee)**



As depicted in fig 4.2.2.a above, the household annual productivity of Coffee has increased from 59,521kg. before implementation of PRICE to 62,826kg. during implementation of PRICE. Productivity has increased even though the same hectares of land are cultivated as shown in fig 4.2.1.a. This is efficiency in productivity is due to improved seedlings, better plantation and maintenance, training and other services provided by under PRICE.

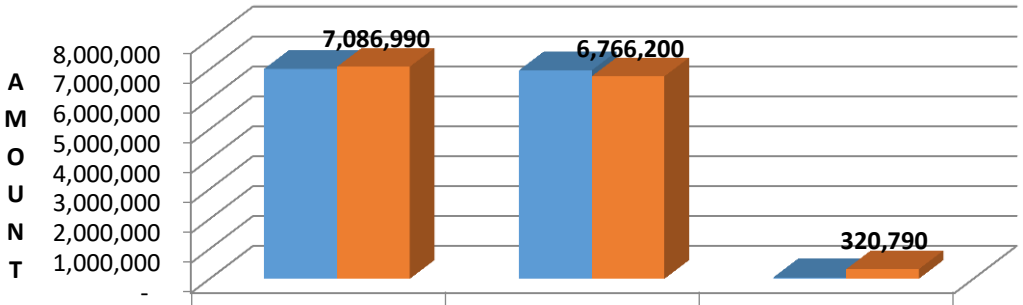
Fig 4.2.2.b **Household Annual Produce of PRICE Beneficiaries (Tea)**



As depicted in fig 4.2.2.b above, the household annual productivity of Tea has increased by 269 percent from 62,949kg. before PRICE to 232,055kg. during PRICE. This increase is due to more hectares of land being cultivated, improved seedling, better plantation and maintenance, training and other services provided under PRICE.

4.2.3 Income Generation: The figure below shows the income, expenditure and net income of beneficiaries before and during the implementation of PRICE.

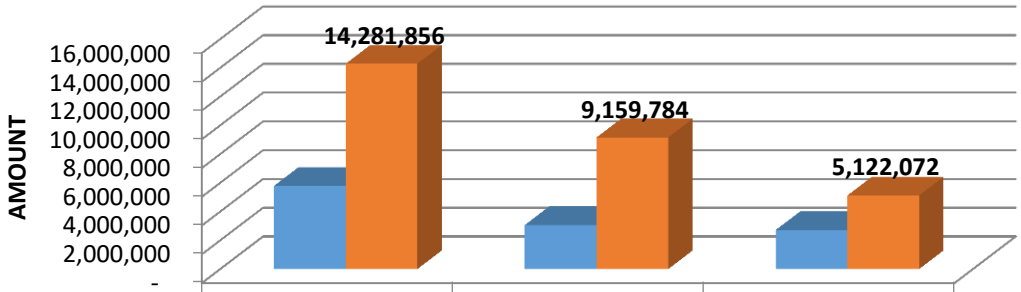
Fig 4.2.3.a **Household Monthly Income & Expenditure of PRICE Beneficiaries (Coffee)**



	Income	Expenditure	Net Income
Before PRICE	7,016,650	6,966,200	50,450
During PRICE	7,086,990	6,766,200	320,790

As shown above income of beneficiaries dealing in Coffee has increased from ₣7,016,650 before PRICE to ₣7,086,990 during PRICE, monthly expenditure reduces from ₣6,966.200 before PRICE to ₣6,766,200 during PRICE and this generated an increase in net income from ₣50,450 before PRICE to ₣320,790 during PRICE. This increased net income is due to improved control over price, reduction in cost due to economies of scale in production, better and improved productivity.

Fig 4.2.3.b **Household Monthly Income & Expenditure of PRICE Beneficiaries (Tea)**



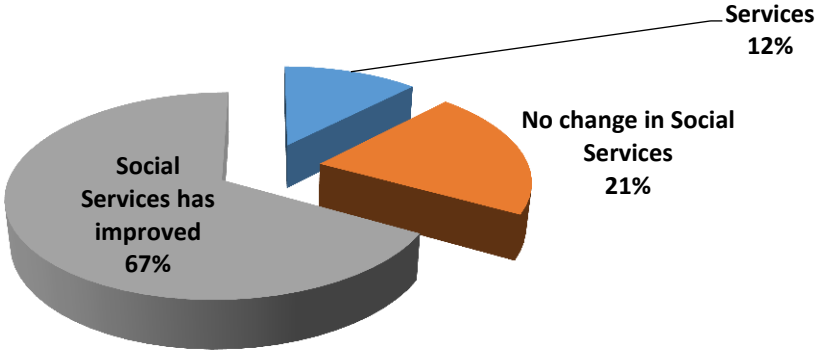
	Income	Expenditure	Net Income
Before PRICE	5,789,343	3,069,502	2,719,841
During PRICE	14,281,856	9,159,784	5,122,072

As shown above income of beneficiaries dealing in Tea has increased from ₣5,789,343 before PRICE to ₣14,281,856 during PRICE, monthly expenditure increases from ₣3,069,502 before PRICE to ₣9,159,784 during PRICE and this generated an increase in net income from ₣2,719,841 before PRICE to ₣5,122,072 during PRICE. This increased net income is due to improved control over price, reduction in cost due to economies of scale in production, better and improved productivity as shown in fig 4.2.2.b.

4.3 ACCESS TO SOCIAL SERVICES

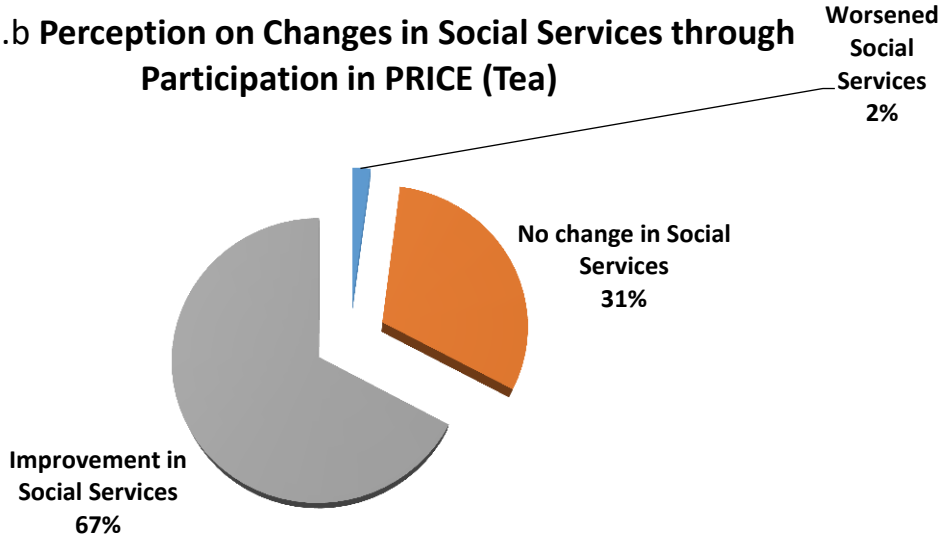
The figure below depicts the perception of beneficiaries on whether there have been improvements in access to social services like drinking water, electricity, primary/secondary school, health services and ICT due their participation in PRICE program.

Fig 4.3.a **Perception on changes in Social Services due to Participation in PRICE (Coffee)**



As the above figure depicts, 67 percent of the beneficiaries (Coffee) believes that there have been improvement in access to social services like drinking water, electricity, primary/secondary school, health services and ICT due their participation in PRICE program. 21 percent believes there is no change in their access to social services before and during PRICE program while 12 percent believes their access to social services has worsened.

Fig 4.3.b **Perception on Changes in Social Services through Participation in PRICE (Tea)**

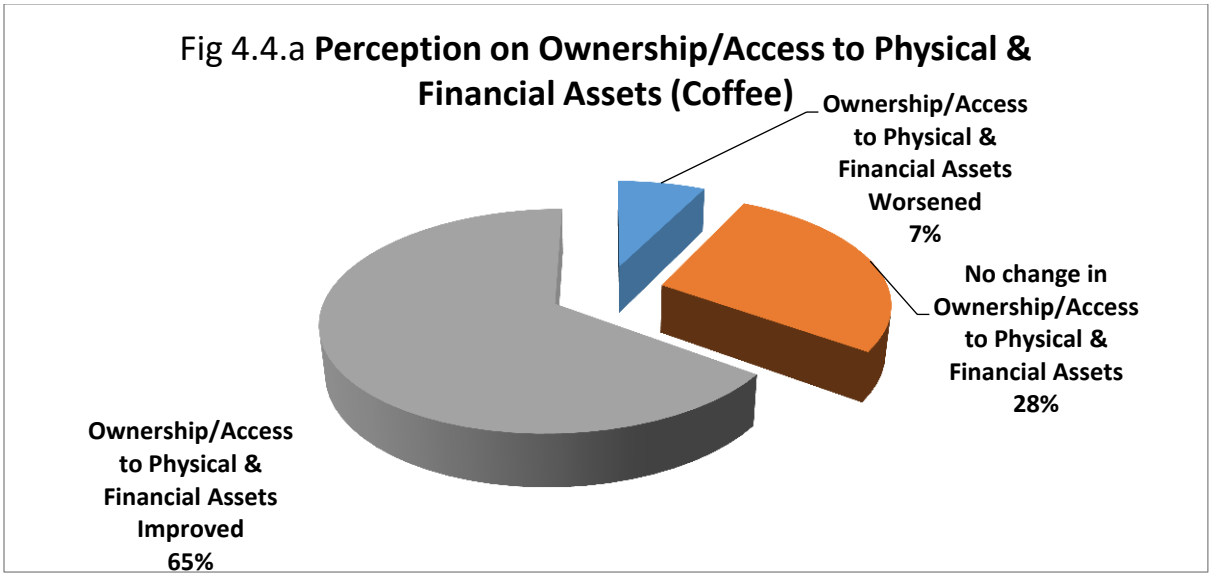


As shown above, 67 percent of the beneficiaries (Tea) believes that there have been improvement in access to social services like drinking water, electricity, primary/secondary school, health services and ICT due their participation in PRICE program. 31 percent believes

there is no change in their access to social services before and during PRICE program while 2 percent believes their access to social services has worsened.

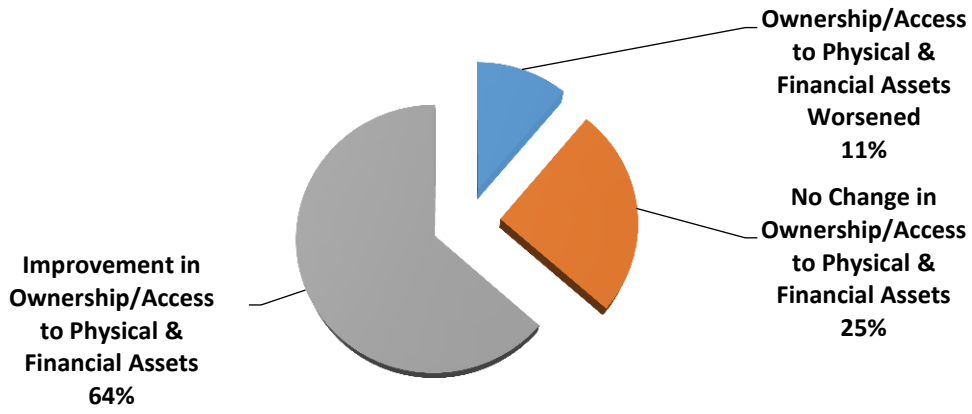
4.4 OWNERSHIP/ACCESS TO PHYSICAL AND FINANCIAL ASSETS.

The figure below shows the perception of beneficiaries on whether there have been improvements in ownership/access to physical and financial assets like landed property, better means of transportation, electrical appliances, hectares of land under better management, farm machinery and household savings.



As shown above, 65 percent of the beneficiaries (Coffee) believe that there have been improvement in ownership/access to physical and financial assets like landed property, better means of transportation, electrical appliances, hectares of land under better management, farm machinery and household savings due their participation in PRICE program. 28 percent believes there is no change in their ownership/access to physical and financial assets before and during PRICE program while 7 percent believes their access to physical and financial assets has worsened.

Fig 4.4.b **Perception on Changes in Ownership/Access to Physical & Financial Assets due to Participation in PRICE (Tea)**

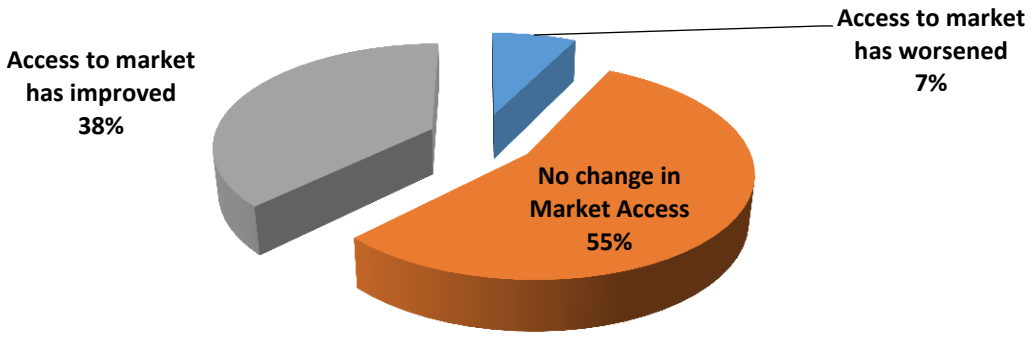


As shown above, 64 percent of the beneficiaries (Tea) believe that there has been improvement in ownership/access to physical and financial assets like landed property, better means of transportation, electrical appliances, hectares of land under better management, farm machinery and household savings due their participation in PRICE program. 25 percent believes there is no change in their ownership/access to physical and financial assets before and during PRICE program while 11 percent believes their access to physical and financial assets has worsened.

4.5 MARKET ACCESS

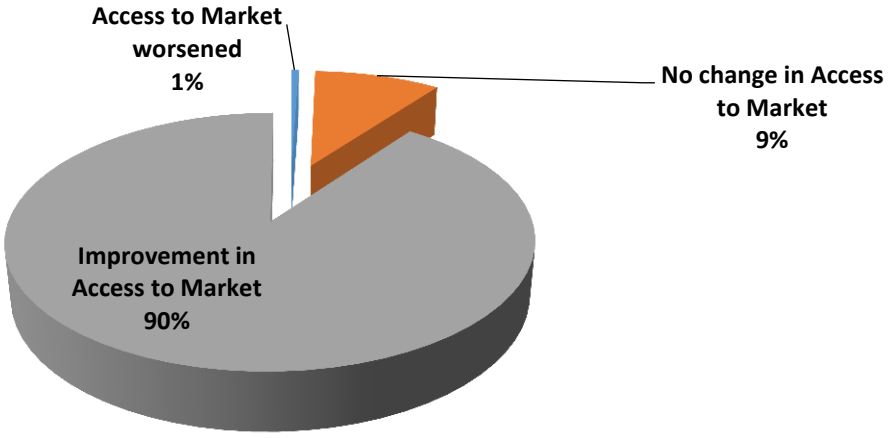
The figure below depicts the perception of beneficiaries on whether there have been improved market access in the area of better storage facilities, cost of transportation and access to market information due to their involvement in PRICE program.

Fig 4.5.a **Perception on Access to Market due to Participation in PRICE (Coffee)**



As shown in the above figure above, 38 percent of the beneficiaries believe there have been improved market access in the areas of better storage facilities, cost of transportation and access to market information due to their involvement in PRICE program. 55 percent believes there have been no changes in market access while 7 percent believes their access to the market has worsened.

Fig 4.5b **Perception on changes in Market Access due to Participation in PRICE (Tea)**

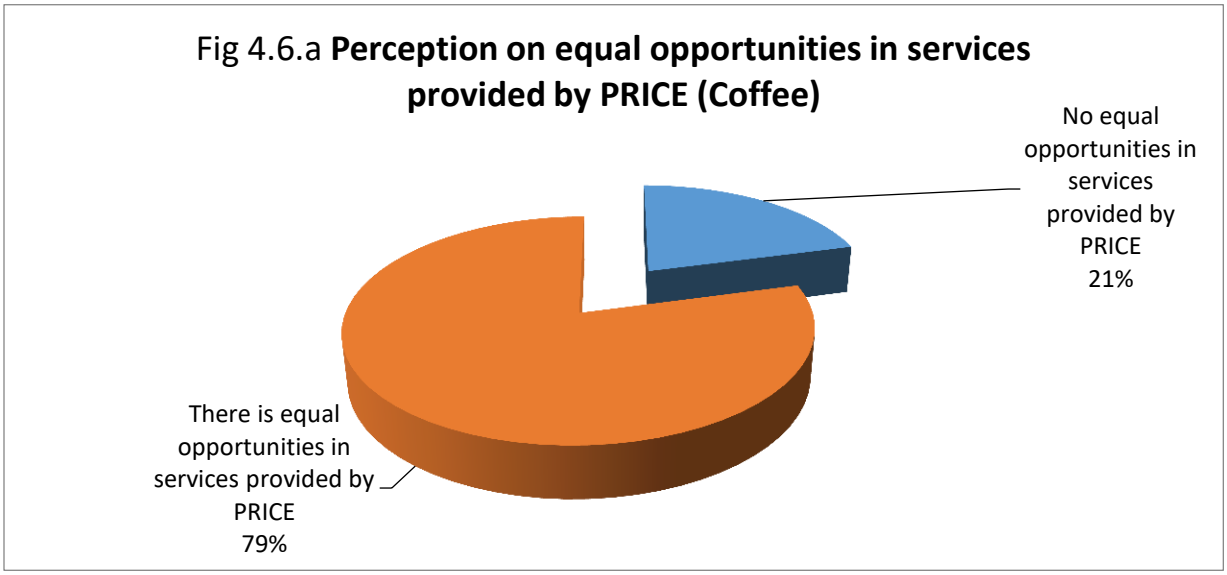


As shown in the above figure above, 90 percent of the beneficiaries believe there have been improved market access in the areas of better storage facilities, cost of transportation and access to market information due to their involvement in PRICE program. 9 percent believes there have

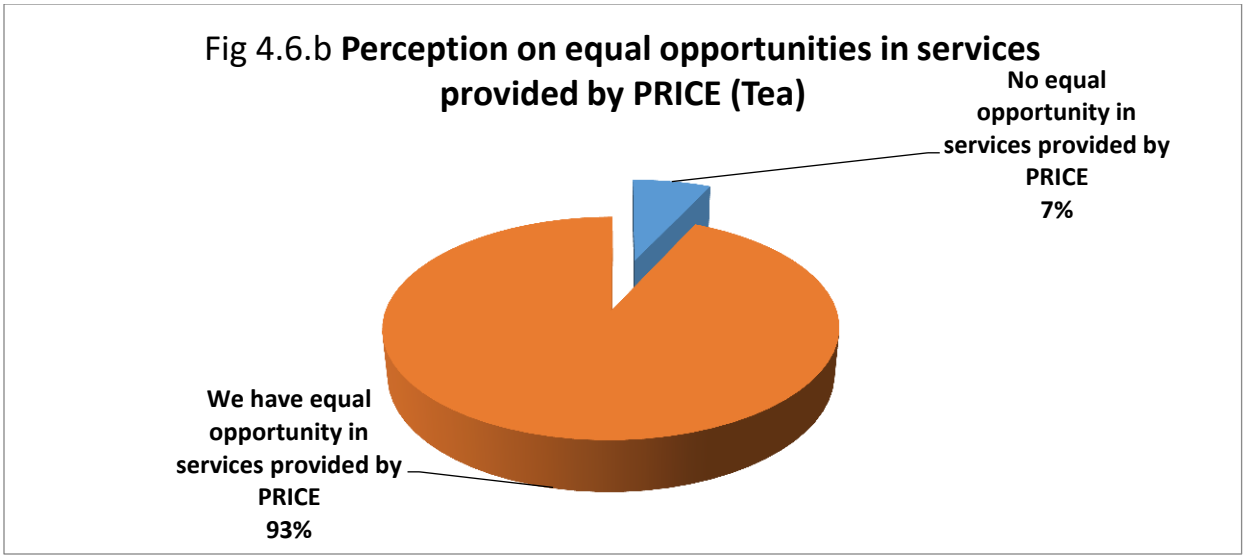
been no changes in market access while 1 percent believes their access to the market has worsened.

4.6 OPPORTUNITIES IN SERVICE PROVIDED BY PRICE

The figure below shows the perception of beneficiaries on whether they have equal opportunities in services provided by PRICE. The services are improved seedlings, better plantation and maintenance, matching grant, loan/guarantee and training.



Equal opportunity in services provided by PRICE implies fairness in the system. As shown in the figure above, majority of the beneficiaries (79 percent) believe they have equal opportunities in the services provided by PRICE while 21 percent believe they do not have equal opportunities in services provided by PRICE.



As shown in the figure above, 93 percent of the beneficiaries believe that they have equal opportunities in the services provided by PRICE while 7 percent believes they do not have equal opportunities in services provided by PRICE.

4.7 VULNERABILITY AND ADAPTABILITY STRATEGIES

The table below shows how vulnerable the beneficiaries have been to product loss and what strategies are been adopted to reduce or manage this loss.

Table 4.7.1 Vulnerability and Adaptability Strategies

	COFFEE		TEA	
	Frequency (N = 163)	**Percentages (%)**	**Frequency (N = 189)**	**Percentages (%)**
How often have you experienced produce loss over the past 6 years?				
Not often	43	26.4	164	86.8
Often	111	68.1	9	4.8
Never	9	5.5	16	8.5
What was the cause of the loss of produce?				
Seedlings	3	1.8	16	8.5
Transportation	41	25.2	27	14.3

Flood	126	77.3	71	37.6
Drought	121	74.2	113	59.8
Storage facilities	30	18.4	31	16.4
How many times do you eat daily?				
Once	66	40.5	72	38.1
Twice	95	58.3	113	59.8
Thrice	2	1.2	4	2.1
Did Loss of produce affect the number of times you eat daily?				
Yes	140	85.9	144	76.2
No	23	14.1	45	23.8
In period of produce loss, what strategies do you adopt to survive?				
Reduction of daily food intake	71	43.6	94	49.7
Reduction of expenditure	69	42.3	121	64.0
Borrowing from friends	65	39.9	139	73.5
Cooperative loans	23	14.1	161	85.2
In periods of droughts or shocks, how do you sustain livelihoods?				
Sell Assets	32	19.6	24	12.7
Borrow from friends	69	42.3	130	68.8
Reduction of expenditure	118	72.4	69	36.5
Does PRICE help sustain livelihoods in period of shocks?				
Yes	67	41.1	108	57.1
No	95	58.3	81	42.9
If Yes, how does PRICE help?				
Loan facilities	14	8.6	79	41.8
Seedlings	51	31.3	78	41.3
Training	36	22.1	55	29.1

Beneficiaries (Coffee)

As the table depicts, majority of the respondents (68.1%) experience product loss often. Many of them (77.3%) and (74.2%) respectively believed flood and drought are the major causes of product loss. This loss affects their pattern of eating as 85.9% of them are affected by this loss. As a means of survival during this period 43.6% reduce their daily food intake, 42.3% adopts other costs cutting measures while 39.9% and 14.1% borrow from friends and take cooperative loans respectively to cushion the effect of this loss.

During the periods of droughts or shocks, as a strategy to sustain livelihoods, majority (72.4%) reduce spending, some (42.3%) borrow from friends while few (19.6%) sell their assets. PRICE has also been helpful during this period by providing them with improve seedlings, training and loan facilities.

Beneficiaries (Tea)

From Table 4.7.1 above, majority of the respondents (86.8%) do not experience product loss often. When they experience it many (59.8%) and (37.6%) respectively believed drought and flood are the major causes of product loss. This loss affects their pattern of eating as 76.2% of them are affected by this loss. As a means of survival during this period 85.2% of them takes cooperative loans, 73.5% borrow from friends, 64% reduce their spending while others (49.7%) reduce their daily food intake to cushion the effect of this loss.

During the periods of droughts or shocks, as a strategy to sustain livelihoods, majority (68.8%) borrow from friends, some (36.5%) reduce their expenses while few (12.7%) sell their assets. PRICE has also been helpful during this period by providing them with improve seedlings, training and loan facilities.

CHAPTER FIVE

5.1 SUMMARY OF MAJOR FINDINGS and CONCLUSION

The purpose of this study was to assess the impact of coffee and tea exports on the rural livelihoods of farmers using PRICE beneficiaries as evidence. The scope of the study was the southern province of Nyamagabe, and the study worked with the coffee and tea cooperatives in the province. The impact on their livelihoods was assessed based on the Sustainable Livelihoods Framework livelihood assets classification and the study also examined their vulnerability context and how they cope with vulnerabilities.

The objectives of the study were;

i. To assess the impact of PRICE on agricultural productivity and income generation
ii. To examine the improvement in social services accessed by beneficiaries.
iii. To assess the improvement in physical and financial assets acquired by beneficiaries.
iv. To assess how beneficiaries, adapt to shocks

Simple random sampling techniques were used to select the beneficiaries from the cooperatives they belong to. Data was gathered from primary sources through interviews using structured questionnaires, in depth interviews and Focus Group Discussion in order to deepen the understanding on different aspects of the study.

The results have clearly shown that the livelihood of the beneficiaries has clearly improved. Most of the beneficiaries recorded an increase in agricultural productivity and income after the PRICE intervention. Most of the beneficiaries, also reported an increase in the perception to improvement in social services, market access as a result of their participation in PRICE. The result also shows the challenges faced by these farmers.

Although the PRICE intervention has improved the productivity and income of the farmers, and their access to social and financial service, most of the beneficiaries are still very vulnerable to product loss mostly as a result of floods and droughts, and there were reports of not having access to services provided by PRICE.

Most of the beneficiaries believe that with an improvement in technology that helps them combat floods and droughts, and a further improvement in access to cooperative loans and other financial services, the project benefits would be way higher. However, the general consensus among beneficiaries is that the project has had a positive impact on their lives.

5.2 LIMITATIONS OF THE STUDY

The data gathering exercise was conducted with the consent and cooperation of beneficiaries save for the challenge of language as most of the respondent could not speak English but the native language, Kinyarwanda. This challenge was overcome by the services of interpreters and enumerators on the field.

Also, a few of the beneficiaries felt they had answered questionnaires in time past and didn't experience any improvement in their lives. Some also felt some of the questions were personal such as income, age, and initially did not feel comfortable answering some of the questions. However, the interpreters did a great job and were also very helpful to reassure them it was for their and we were able successfully conclude the data gathering exercise.

5.3 RECOMMENDATIONS

It is no doubt that the PRICE intervention has improved the rural livelihoods of the coffee and tea farmers in Nyamagabe, however, the project can continue to build on its positive impact on the lives of the rural poor since 2011 since it was established.

The following are recommendations to continue to improve the impact of the project on the farmers:

Incorporating Entrepreneurship in Cooperative Management

Cooperatives have been an important asset for Rwanda's smallholder farmers, allowing them to earn more money from their produce, develop additional skills, and work cooperatively with others in ways that may promote reconciliation. This must have been a major reason for the project choosing to work with cooperatives. However, the project should incorporate entrepreneurship into the trainings given to these rural farmers as this will further empower them, improve their income, and have other indirect (such as improved access to social services, health) as they will be more disposable income available which will lead to an improvement in their livelihoods.

Education on coping with Climate Change

Climate change is one of the major challenges affecting the 21st century and rural farmers are not left out. This is one of the vulnerability context in which they are exposed to (drought and floods being examples) and this often leads to produce loss and reduced income for them thereby hindering their livelihoods. Therefore, education on mitigating the effects of climate change is very crucial.

Transportation Infrastructure

As a landlocked country with limited paved roads in rural areas where most coffee is grown, transport costs in Rwanda are high. Rwanda's smallholder subsistence farmers are disconnected from markets as a result of "extremely high" transport costs. Transport within Rwanda itself was estimated at 40 percent of the producer price. If transport costs were reduced, through the development of better rural infrastructure and, in particular, more effective rural transport routes,

access to markets would improve and poverty levels would likely be reduced.

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QUESTIONNAIRE

IMPACT OF COFFEE AND TEA EXPORTS ON RURAL LIVELIHOODS IN NYAMAGABE: EVIDENCE FROM PRICE BENEFICIARIES

Introduction

This survey is aimed at assessing the impact of COFFEE AND TEA EXPORTS on rural households in the province of Nyamagabe. This questionnaire is, therefore, designed to elicit information from beneficiaries of the project on possible changes contributed by the project. Whatever information obtains from you will be treated with strict confidentiality. Thank you for your cooperation.

Household Questionnaire

Questionnaire Number: _____ G.P.S. Location/Aho haherereye: _____
Date/Italiki: _____ District/Akarere: _____ Sector/Umurenge: _____
Village/Umudugudu: _____

Section A: Socio-demographic Characteristics of Respondents/Imyirondoro y'ubazwa

	QUESTIONS/ STATEMENTS	RESPONSE			CODING
100	What was your age at last birthday? /*Ufite imyaka ingahe?*	_____ years/imyaka			
101	What is your highest Educational qualification? /*Wize amashuri angahe?*	1. No Formal Education/sinize 2. Primary/amashuri abanza 3. Secondary/amashuri yisumbuye 4. HND/University degree/kaminuza 5. Other, specify/Ikindi kivuge _____			1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
102	Marital Status/*Irangamimerere*	1. Single/Ingaragu 2. Married/Yarashatse 3. Widow/Umupfakazi 4. Divorced/Yatandukanye n'uwo bashakanye			1 ☐ 2 ☐ 3 ☐ 4 ☐
103	Gender/*Igistina*	1. Female/Gore 2. Male/Gabo			1 ☐ 2 ☐
104	Head of Household	1. Female/Gore 2. Male/Gabo			1 ☐ 2 ☐
105	Household Size	Female/Gore	Male/Gabo	Total	

SECTION B: AGRICULTURAL PRODUCTIVITY AND INCOME GENERATION

	QUESTIONS/ STATEMENTS	BEFORE PRICE	DURING PRICE	CODING
200	Size of land	1=Below 0.25 ha 2=0,25-0,50 ha 3=0,50-0,75 ha 4=0,75-1ha 5=Above one hactre	1=Below 0.25 ha 2=0,25-0,50 ha 3=0,50-0,75 ha 4=0,75-1ha 5=Above one hactre	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
201	Annual produce (in kg)	_____	_____	
202	Who sets price for produce	1=NAEB	1=NAEB	1 ☐

		2=Co-operatives 3=Self 4=Others_____	2=Co-operatives 3=Self 4=Others_____	2 ☐ 3 ☐ 4 ☐
203	Currency of payment	1= Rwanda Francs 2= US Dollars 3= Others_____	1= Rwanda Francs 2= US Dollars 3= Others_____	1 ☐ 2 ☐ 3 ☐
204	Do you keep part of your produce at home?	1=Yes 2=No	1=Yes 2=No	1 ☐ 2 ☐
205	If Yes, what is the amount of produce kept at home	_____	_____	
206	What is the amount sent to the market?	_____	_____	
207	Do you grow any other crops	1=Yes 2=No	1=Yes 2=No	1 ☐ 2 ☐
208	If No, why?	1= land availability 2= labour availability 3=Others_____	1= land availability 2= labour availability 3=Others_____	
209	Household monthly income from coffee/tea production	_____	_____	
210	Household monthly expenditure	_____	_____	

SECTION C: SOCIAL SERVICES

Kindly indicate improvement in factors of assets as listed in the table below in the last 6 years (between 2011 and 2017) that is due to your participation in PRICE project

	Variable	Worsened	No Change	Improving
300	Access to Drinking water			
301	Access to electricity			
302	Access to Primary/secondary school			
303	Access to Health services			
304	Means of Information and communication			

SECTION D: PHYSICAL AND FINANCIAL ASSETS

Kindly indicate improvement in ownership/access to physical and financial assets as listed in the table below in the last 6 years (between 2011 and 2017) that is due to your participation in PRICE project

	Variable	Worsened	No Change	Improving
400	Number of landed property owned			
401	Means of transport (bicycle, motorcycle, car)			
402	Electrical appliances (fridge, television, radio)			
403	Hectares of land under improved management			
404	Farm machinery			
405	Household savings			

SECTION E: **Market Access**

Kindly indicate changes in the following as a result of your participation PRICE programme in the past 6 years (2011 to 2017)

	Variable	Worsened	No change	Improved
500	Access Modern Storage facilities			
501	Cost of Transportation			
502	Access to Market information			

Please indicate whether you have equal opportunities with respect to access to the following services provided by PRICE programmes

	Variables	**Yes**	No
503	Seedlings		
504	Plantation and maintenance		
505	Matching Grants		
506	Loan/Guarantee		
507	Training		

SECTION F: VULNERABILITY CONTEXT AND ADAPTABILITY STRATEGIES

600	How often have you experienced produce loss over the past 6 years	1= Not often 2= Often 3= Never	1 ☐ 2 ☐ 3 ☐
601	What was the cause of the loss of produce?	1. Seedlings 2. transportation 3. Floods 4. Drought 5. Storage facilities 6. Other, specify_____	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐
602	How many times do you eat daily?	1= Once 2= Twice 3= Thrice	1 ☐ 2 ☐ 3 ☐
603	Did Loss of produce affect the number of times you eat daily?	1= Yes 2= No	1 ☐ 2 ☐
604	In period of produce loss, what strategies do you adopt to survive?	1= Reduction of daily food intake 2= Reduction of expenditure 3= Borrowing from friends 4= Cooperative loans 5=Others_____	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
605	In periods of droughts or shocks, how do you sustain livelihoods?	1= Sell assets 2= Borrowing from friends 3= Reduction of expenditures 4= Others_____	1 ☐ 2 ☐ 3 ☐ 4 ☐
606	Does PRICE help sustain livelihoods in period of shocks?	1= Yes 2=No	1 ☐ 2 ☐
607	If Yes, how does PRICE help?	1= Loan facilities 2=Seedlings 3= Trainings 4=Others_____	1 ☐ 2 ☐ 3 ☐ 4 ☐

SECTION G: General Comments

List the most important factors you think limits the impact of PRICE

i. ……

ii. ……

iii. ……

WORK PLAN OF THE INTERNSHIP

S/No	Activities	March			April				May				June	July	
		Week													
		1	2	3	4	5	6	7	8	9	10	11	12	13-16	17-18	
1.	Preparation and travel plan to field trip / Familiarity with the project team members															
2.	Conduct a pretest of the survey Instrument															
3.	Work with the project design plan and visit to field															
4.	Data Collection															
5.	Monthly Report to UI															
6.	Computation and analysis of data and compilation of reports															
8.	Submission of Draft report															
9.	Predation and travel plan from project site															
10	Submission of draft report to Supervisors															
11	Final report submission															

PICTURE GALLERY

Coffee washing Station

Respondents

Respondents

Coffee beans

Green Tea Leaves

ACKNOWLEDGEMENTS

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