# Chapter One: Introduction

### 1.1 Background Study

Agriculture is the backbone of many developing economies, providing critical contributions to employment, food security, and national GDP. In sub-Saharan Africa, agriculture employs over 60% of the population and contributes about 23% to the region's GDP (FAO, 2020). In Kenya, for example, agriculture is the primary source of income for a significant portion of the rural population, accounting for roughly 33% of the country's GDP and employing more than 70% of the workforce (World Bank, 2021). Despite its importance, agriculture in these regions faces significant challenges, particularly among small-scale farmers. These challenges include limited access to markets, high operational costs, lack of transparency in pricing, and the dependence on intermediaries to reach consumers.

A key issue faced by farmers in both the global and Kenyan contexts is the intermediaries who control market access and dictate prices. Farmers often lose as much as 40% of their earnings due to intermediaries who manipulate prices, leading to diminished profits and a lack of bargaining power (FAO, 2022). This issue is exacerbated by the absence of transparent pricing mechanisms and the lack of real-time information on market demand and supply. Smallholder farmers also struggle with access to critical resources, such as modern farming equipment, quality seeds, expert advice, and extension services. These resource gaps limit farmers' productivity and hinder their ability to scale operations.

In response to these challenges, digital platforms have emerged as potential solutions to bridge the gap between farmers and markets. Mobile-based agricultural marketplaces, for example, provide farmers with access to direct buyers, enabling them to bypass intermediaries and secure better prices for their produce (KAAA, 2016). Furthermore, these platforms can facilitate access to agricultural services, such as expert guidance, agricultural inputs, and secure payment solutions, thus enhancing farmers' productivity and income.

However, while digital platforms hold great promise, many existing platforms fail to address the specific needs of rural farmers. The majority of these platforms are either too complex for the target user or not adapted to the unique challenges faced by smallholder farmers, such as poor internet connectivity, limited digital literacy, and insecure payment systems (World Bank, 2020). Additionally, the lack of trust in digital transactions remains a significant barrier to adoption, as many rural farmers are skeptical of online payments and are more accustomed to traditional barter or cash systems.

This study aims to develop a mobile-based agricultural marketplace that addresses these challenges. The **AgriConnect** will focus on simplifying user experience, providing secure payment solutions, and enhancing market access for farmers. By leveraging mobile technology, this marketplace has the potential to significantly improve the income and productivity of small-scale farmers, while contributing to the broader goal of sustainable agricultural development in Kenya and other similar contexts.

### 1.2 Statement of the Problem

Farmers in developing countries, particularly in sub-Saharan Africa and Kenya, face significant challenges in accessing markets for their products and services. The lack of direct market access often leaves farmers at the mercy of intermediaries who manipulate prices and dominate the supply chain. These middlemen siphon off a substantial share of the earnings, leaving smallholder farmers with less than 30% of the final market price. The absence of transparent pricing mechanisms further limits farmers’ bargaining power, discouraging investments in productivity and long-term improvements.

Financial exclusion is another critical issue for farmers, as high interest rates, limited collateral, and financial illiteracy prevent them from accessing loans or credit. Without affordable financing options, farmers are unable to invest in essential improvements, such as modern farming equipment, quality seeds, and efficient irrigation systems. Additionally, limited access to affordable land for leasing and the high cost of farm inputs significantly hamper farmers' ability to scale their operations and achieve sustainable productivity.

Farmers also lack access to expert agricultural advice and extension services, which are crucial for adopting modern farming techniques, improving crop yields, and managing climate-related challenges. Many rely on outdated practices due to the underfunding of extension services, leading to poor-quality produce and reduced earnings. Addressing these issues requires a comprehensive solution to facilitate market access, provide financial support, ensure affordable farm resources, and deliver expert advice to empower farmers for long-term success.

#### 1.3 Objectives or Purpose of the Study

##### General Objective:

To develop a mobile-based agricultural marketplace that connects farmers with buyers and service providers, facilitating the sale, purchase, and leasing of agricultural products, tools, land and equipment.

##### Specific Objectives:

To design and implement a mobile application that enables farmers to list and sell agricultural products, tools, land, and equipment.

To integrate secure payment systems, such as M-Pesa and PayPal, for safe and transparent transactions.

To provide communication and negotiation features within the platform for buyers and sellers.

To offer access to expert advice and localized information on best agricultural practices.

To facilitate the leasing and sale of agricultural land through the platform.

To facilitate access to loans for farmers.

**1.5 Significance of the Study**

This study is significant as it aims to address key challenges faced by smallholder farmers by leveraging digital technology to improve market access, financial inclusion, and knowledge sharing. The development of a mobile-based agricultural marketplace will have the following impacts:

**Empowering Farmers through Direct Market Access**  
The platform will enable farmers to sell their products directly to buyers, eliminating intermediaries who manipulate prices. This will increase farmers' earnings and promote fair trade.

**Enhancing Financial Inclusion**  
By integrating secure payment systems such as M-Pesa and PayPal, the platform will facilitate safe and transparent transactions, increasing farmers' confidence in digital commerce. Additionally, the platform will provide access to financial services, including loans, to help farmers invest in agricultural inputs and expand their operations.

**Providing Access to Agricultural Expertise**  
The platform will serve as a knowledge hub, connecting farmers with agricultural experts who can provide guidance on best farming practices, pest control, and climate adaptation strategies. This will improve productivity and reduce post-harvest losses.

**Facilitating the Leasing and Sale of Agricultural Land and Equipment**  
Many farmers struggle to access land and modern farming tools. This study will provide a solution by enabling the leasing and sale of land and equipment through a digital marketplace, fostering growth and scalability in the agricultural sector.

**Promoting Sustainable Agriculture**  
The study contributes to sustainable agricultural development by providing farmers with information on eco-friendly practices, improving food security, and reducing wastage through better supply chain management.

### References

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