CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The removal of fuel subsidies in Nigeria has a subject of considerable debate, largely due to its far-reaching implications on the economy and livelihoods(Adebayo,2019). fuel subsidies were initially introduced as a mechanism to cushion the effects of high global fuel prices, ensuring affordability for citizens and reducing the cost of goods and services(Ogunyemi,2020). However, over time, the sustainability of subsidies has been questioned due to their fiscal burden and inefficiencies(Adepoju,2021).

Agriculture remains a fundamental sector in Nigeria's economy, providing livelihoods for millions, especially in rural areas where crops like maize, millet and sorghum are primary staples(Ibrahim,2022).These crops not only contribute to food security but also play a vital role in the income generation and socio-economic development of farming communities(okunade,2020).In Kwara State, located in the north-central region of Nigeria, maize, millet and sorghum are grown by smallholder farmers who rely heavily on accessible resources such as inputs(fertilizers, seeds),Mechanized farming equipment, and transportation. These crops are not only crucial for local consumption but also serve as key export products within the west African region (Olorunfemi &Adebayo,2018).

A critical factor influencing agricultural production is fuel, which is used for a variety of farming activities including transportation of goods, operation of farm machinery and running irrigation systems(ogunyemi,2020).in response to increasing fuel prices, the Nigerian government has historically implemented fuel subsidies to make petroleum products affordable for consumers, particularly in rural areas(Adepoju,2021).This situation has wider implications for rural development, as it exacerbated the socio-economic disparities between rural and urban populations in Nigeria(Ibrahim,2022).As fuel subsidies are reduced or eliminated, the ability of smallholder farmers to invest in agricultural productivity diminishes, thereby

threatening the long-term sustainability of rural economies and food security(Okunade,2020).in this context, it is crucial to examine the specific effects of fuel subsidy policies on agricultural sector is essential for both economic development and food security (Olorunfemi &Adebayo,2018).The policy was designed to reduce transportation costs, improve access to agricultural inputs, and encourage food production particularly for rural farmers who rely on petroleum for their daily operations(Aluko,2021).

However, in recent years, Nigeria's government has faced significant fiscal challenges, prompting the gradual removal or reduction of fuel subsidies. This policy shift has led to a rise in fuel prices, which in turn increases the cost of transportation and agricultural production(Ibrahim,2022).For farmers in Kwara State, the increase in fuel prices directly impacts the cost of inputs such as fertilizers and pesticides, which are transported by cost of mechanized equipment(such as tractors)used in planting, weeding and harvesting(okunade,2020).

The consequences of fuel subsidy removal or reduction extend beyond increase production costs. They also influence productivity, profitability, and the overall economic well-being of farmers. According to studies, rising fuel prices can lead to a reduction in agricultural yield due to higher input costs and the reduced capacity to utilize mechanized equipment (Olorunfemi & Adebayo,2018).for crops like maize, millet and sorghum, whose production relies on consistent input supply and affordable transportation, fuel price hikes can result in diminished crop yields and, in some cases, lower quality produce(Umar et al,2019),this not only affects the livelihood of farmers but can also have long-term consequences for food in the region.

In Kwara State, the removal of fuel subsidies has further stressed the livelihoods of farmers who depend on these crops for their economic survival(Adepoju,2021).Farmers who once relied on fuel-dependent machinery are now facing difficulties in maintaining productivity (Adebayo,2019).Moreover, the higher transportation costs make it increasingly difficult to access distant markets, leading to post-harvest losses and a

reduction in the overall profitability of their farming operations (okunade,2020).While there is significant discourse on the economic impacts of fuel subsidy policies at the national level, fewer studies focus on the micro-level effects particularly in rural areas like Kwara State where smallholder farmers are the backbone of food production (Olorunfemi &Adebayo,2018).

1.2 STATEMENT TO THE PROBLEM

The removal of fuel subsidies has become a contentious policy issue, particularly in countries where agriculture plays a central role in ensuring food security and driving economic development (Adepoju et al.,2019).Fuel is a critical input in agricultural production, influencing the cost of farm operations, transportation of inputs and outputs, and post-harvest processing (Ibrahim et al.,2020).With the removal of fuel subsidies, the resultant increase in prices directly affects these costs potentially disrupting grain production systems, particularly for staples such as maize, millet, and sorghum(world Bank,2022).These grains are vital for the diets and livelihoods of millions, especially in rural and semi-arid and regions(FAO,2021).

The problem arises from the uncertainty surrounding how farmers, particularly smallholder producers who are most vulnerable to rising costs, will respond to the increased financial burden(Olorunfemi et al.,2021).Higher production costs may lead to reduced farm sizes, lower yields, or shifts to less fuel-dependent crops(Eboh et al.,2022).Additionally, the higher cost of transporting grains to markets could inflate consumer prices, further exacerbating food insecurity for low income households(Ahmed et al.,2020).These issues are compounded by limited access to alternative energy sources, infrastructure challenges, and a lack of targeted support systems to cushion the effects of subsidy removal(Ayanwale,2019).

Further, the broader implications for agricultural sustainability, rural economies and national food security remain unclear (Njoku et al.,2021).The lack of empirical evidence on how fuel subsidy removal specifically evidence on how fuel subsidy

removal specifically impacts maize, millet, and sorghum production creates a gap in understanding the full scale of the challenges and opportunities associated with the policy change(Agboola et al.,2022).Without addressing these uncertainties, policymakers risk implementing reforms that may inadvertently harm vulnerable populations, disrupt grain supply chains and undermine progress toward achieving food security and sustainable development goals(FAO,2021).

This study seeks to address these gaps by analyzing the direct and indirect impacts of fuel subsidy removal on grain production (Olayemi et al.,2020).it aims to provide evidence based insights to guide decision-making and develop strategies to mitigate the adverse effects while ensuring the resilience and sustainability of grain production systems (Works Bank,2022).

1.3 RESEARCH QUESTION

1. what are the socio-economic characteristics of the grain farmers in the study area?
2. How does the removal of fuel subsidies impact the profitability of grain production?
3. What is the effect of fuel subsidy removal on the grains farmer in the study area?
4. What challenges arise from the removal of fuel subsidies?

1.4 OBJECTIVES OF THE STUDY

1. To examine the socio-economic characteristics of grain farmers in the study area.
2. To evaluate the profitability of grain production after the removal of fuel subsidies.
3. To analyze the effect of fuel subsidy on grains farmers in the study area.
4. To identify the challenges associated with the removal of fuel subsidies.

1.5 HYPOTHESES

H_0 (Null Hypothesis): The removal of fuel subsidies has no significant impact on the production costs of maize, millet, and sorghum in Kwara State.

H_a (Alternative Hypothesis): The removal of fuel subsidies has a significant impact on the production costs of maize, millet, and sorghum in Kwara State

1.6 SIGNIFICANCE OF THE STUDY

The removal of fuel subsidies has far-reaching implications for agricultural production, particularly for staple grains such as maize, millet and sorghum. These grains are essential for food security and economic livelihoods, especially in developing economies where a significant portion of the population relies on farming. Analyzing the impact of subsidy removal on grain production is vital to understanding how increased fuel costs affect agricultural inputs like transportation, irrigation, and mechanization such analyses provide insight into the cascading effects on production costs, market accessibility, and overall grain yield.

Furthermore, these analyses are crucial for policymakers and stakeholders in agriculture to make informed decisions. They help identify challenges farmers face, such as increased expenses for fertilizer or distribution or reduced access to markets due to high transportation costs. By assessing the economic and social implications, governments can design targeted interventions, such as alternative subsidies or support programs, to mitigate the negative effects of rising fuel costs on smallholder farmers. This ensures that food supply chains remain resilient and that rural livelihoods are protected despite broader fiscal reforms.

Lastly, studying the impacts of fuel subsidy removal on grain production contributes to the broader understanding of sustainable agricultural development.it sheds light on how energy policies intersect with food security, environmental sustainability, and rural development. By examining the specific challenges and opportunities presented by

subsidy removal, the analysis fosters innovation and adaptation in farming practices.it also informs strategies for balancing economic reforms with the need to maintain affordable and accessible food for growing populations.

1.7 DEFINITION OF TERM

SUBSIDY: A subsidy is a financial benefit or support provided by a government or other institution to individuals, businesses or industries to promote economic or social policies

IMPACT: Impact refers to the effect or influence that a particular action, event, or decision has on a person, group, organization, community or environment.

CONSUMPTION: Consumption is the process of using goods and services to satisfy needs and wants.

POLICY: A policy is a set of principles, rules or guidelines adopted by an individual, organization or government to guide decision-making and actions.

FUEL SUBSIDY REMOVAL: Fuel subsidy removal is the elimination of government financial support that lowers fuel price, allowing prices to reflect market rates.

GRAIN PRODUCTION: Grain production is the cultivation and harvesting of cereal crops like maize, sorghum and millet for food, and industrial use.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 PETROLEUM SUBSIDY REMOVAL AND THE NIGERIAN ECONOMY

The removal of fuel subsidies in Nigeria has been a subject of intense debate and scrutiny since 2010,initiated as part of the deregulation of the downstream sector in alignment with IMF requirements,the gradual elimination of subsidies has led to significant increase in fuel cost and subsequent price hikes across various sectors(Akinyemi et al.,2017).This removal has both informational and macro economics implication with fuel dealers passing on higher costs to

consumers thereby impacting transportation costs and the prices of other goods(olaniyi,2016).

The macro economic effects of subsidy removal are intertwined with the interdependence between transportation cost petroleum product prices and commodity prices increases in fuel cost leading to higher transportation and power generation expenses ultimately driving up commodity price(olaniyi 2016).Despite arguments in favor of subsidy removal for improved agricultural sector it's impact on transport costs particularly in low and middle income countries(olaniyi,2016).

2.1.2 FUEL SUBSIDY AND AGRICULTURE

Fuel subsidies are a significant economic policy tool in many countries,including Nigeria,where they are used to keep the cost of fuel low for consumers.This literature review aims to export the effects of fuel subsidies on agricultural production,with a particular focus on Nigeria. the review examines both the positive and negative consequences of fuel subsidies on farmers agricultural economy.Adebayo,A.,&olamide,A.(2020).

2.1.3 GRAIN CROP PRODUCTION

Maize is an important food and food crops in Nigeria and remains an important crop for rural food security.The production of the crop must be increased in order to ensure food and income varieties and technologies.Maize is a staple food of great socio-economic importance in developing countries and it has a wide range of uses,These include baking,brewing industries and livestock feed,it is an important source of industries and livestock feed,it is an important source of carbohydrate protein iron,vitamin B and minerals.Green maize(fresh on the cob)is eaten parched,baked,roasted or boiled playing an important role in filling the hunger gap after the dry season and serving as a staple diet for 200 million people(Directorates Agricultural information services in cooperation with ARC-grain crop institute,2003)while in developed countries,maize is consumed as second cycle produced in the form of meat eggs and dairy products.The importance of maize cannot be overemphasized with Nigeria producing 43% of maize grown in West Africa.Maize is the most important staple food in Nigeria,it accounts for about 43% of calorie intake(Nweke et al.,1983;NARP 1994)Maize has consumption quantity of 53.20g/capital/day(FAOSTAT,2007).

According to FAO data is the area in which Maize was planted in west and central Africa Aline increased from 3.2million hectares in 1961 to 8.9million hectares in 2004.The phenomena expansion of the land area devoted to maize resulted in increased in production from 2.3million metric tonnes in 1961 to 10.6million in metric tonnes in 2005.In Nigeria between 2004 to 2007,the quantity of maize produced ranged from 5,567,000 tonnes to 7800 tones(FAO,2008).

Production per hectare is still very low(1.3 tonnes per ha)in most developing countries.Tge poor performance in the agricultural sector has led to decline in agricultural production and overall low economic growth.This has called for the intensification of agriculture through development of improved varieties and production techniques(FAO.1986).

Maize production in Nigeria has not been sufficient enough to meet the needs of people and livestock,supply has not been able to meet demand despite the introduction of improved package(Babatunde et al., 2008).

This study attempt to identify the available new maize varieties In study area.The source of information on new maize varieties determine the extent to which the farmers are aware of the improved maize varieties,the influence of socio-economic characteristics of the framers on adoption of improved maize varieties and the problem confronting farmer's adoption of new maize varieties

2.1.4 FUEL COST AND GRAIN PRODUCTION

Fuel is essential for numerous agricultural processes including land preparation planting,irrigation post harvest processing and transportation.

The removal of fuel subsidies impacts the agricultural sector's cost structure affecting production transportation and overall competitiveness(okwuanya et al.,2015).Nigeria's dependence on imported petroleum products further exacerbates the situation jeopardizing the nation's balance of payments and capital investments(Adelabu,2012).The withdrawal of subsidies also disrupts rural economics hindering access to market and impeding economic growth(Abudulkareem and Abudulhalkeem,2016).

Land preparation and planting:Mechanized farming relies on tractor and plows which consume significant amount of diesel with fuel prices doubling after subsidy removal,smallholder farmers in Kwara state reduced mechanization leading to inefficient land preparation and delayed planting seasons(olayemi & ibitoye 2021).

IRRIGATION SYSTEM:Millet and sorghum are drought resistant crops however supplementary irrigation is often required in arid regions of Kwara state.Riding fuel prices have made irrigation pumps costly to operate limiting water access during critical growth phases(Akinyemi et al.,2019).

POST HARVEST PROCESSING:Maize processing which includes shelling and drying heavily relies on machinery powered by fuel,Fuel subsidy removal has increased post harvest losses due to farmer's inability to afford mechanical processing as highlighted by Olawale et al.,2022.

2.1.5 SORGHUM PRODUCTION IN NIGERIA

Sorghum(sorghum bicolor L.Moench)Is one of the most important staple crops in Nigeria,and is the most important cereal door in the Northern states that covers the Guinea Savannah ecological zone(FAO,2025),sorghum production surpasses all other crops(FMEST,1984).in terms of food contribution,sorghum is the major cereal consumed by the majority of the population(NAERIS).in the Northern states,about 73% of the total calories intake are contributed by sorghum alone(Samm,2009).

Sorghum has a unique property that makes it well suited for food uses.Sorghum varieties are rich in antioxidants and all sorghum varieties are gluten free,alternative for wheat allergy sufferers(Ammon 2,2010).Sorghum is one of the most drought tolerant cereal crops currently under cultivation,it offers farmers the ability to reduce costs on irrigation and others on farm expenses.Sorghum requires an average temperature of at least 25°c to produce maximum yield,is a very competitive crop and does well in competing with weeds in narrow rows(FAOSTAT,2010).

Sorghum is a very high nitrogen feeding crop.it's growth habit is similar to that of maize.it has a waxy coating on its leaves and stems which helps to keep water in the plant even in intense heat(Annon 2,2010).The leaves and grain of sorghum are use for alcoholic and non-alcoholic drinks as well as in the baking abs confectionary industry.In Nigeria,according to NRC(1996),sorghum has greater untapped potential than any other crop.it even postulated that if the twentieth century was the country of rice,wheat and maize,then the twenty first century could become the century of sorghum.

2.1.6 MILLET PRODUCTION

Millet holds significant cultural and agricultural importance in Nigeria,particularly in the northern regions where it is one of the primary staple crops.In Nigeria,miller in mainly cultivated fur it's grain,which is used for human consumption and for fodder for livestock.Millet in Nigeria is primarily grown in the northern states, where the climate is typically semi-arid with little rainfall and poor soil fertility.These environmental conditions make millet an ideal crop due to its drought tolerance and ability to thrive in areas where other cereals like maize or rice may not succeed.The main variety grown in Nigeria is pearl millet(pennisetun glaucum),which is particularly well-suited to the county's climate.it is commonly used to prepare traditional Nigerian foods such as tuwo,a thick porridge,and Ogi,a fermented drink made from millet flour.These foods are important not only for their nutritional but also as part of the cultural heritage in many northern Nigerian communities(Ajayi et al,2020).

Despite its importance,millet production in Nigeria faces several challenges,one significant issue is the declining area of land dedicated to millet farming,as farmers increasingly opt for other crops such as maize or rice,which are perceived as more profitable or In demand.Additionally,millet farming is constrained by poor infrastructure,limited access to modern farming inputs,and market inefficiencies that makes it difficult for farmers to secure fair prices for their produce(obilana & manyasa,2002).Furthermore,the low status of millet compared to other grains means it often receives less attention from policy makers,resulting in limited government support for research,extension services and market development.

2.1.6 IMPORTANCE OF GRAIN PRODUCTION IN NIGERIA

In Kwara State,grains such as maize,millet,sorghum play an essential role in both local and national agriculture.These crops are key to the livelihoods of smallholder farmers and contribute significantly to food security and the economy.

Grain crops are a vital part of the diet in Kwara state.Maize,Millet and sorghum provide essential

nutrients and are staple foods for local populations.According to Ajiboka et al.(2019).These grains are critical in mitigating hunger and malnutrition,particularly in rural households where alternative sources of food may be limited.

Smallholder farmers rely on grain production to generate income.surplus grains are sold in local markets,which enhances the financial security of these families,udo(2021)highlights that for many smallholders in Kwara,grain framing serves as a primary source of income,contributing to over all economic well-being.

In addition to their nutritional and economic importance,grains like millet also hold cultural value in Kwara state.These grains are used in traditional ceremonies and festivals,reflecting the social and cultural fabric of rural communities(Ali et al,2020).

2.1.7 NUTRITIONAL BENEFITS OF GRAINS

Grains are a rich source of essential nutrients,making them a significant part of the diet for millions of people in Kwara state.The nutritional value of grains varies,but they typically provide vital macronutrients like vitamins and minerals.

Maize(Zea mays)is one of the most widely grown crops in Kwara state.it is rich in carbohydrates,which plays a crucial role in maintaining healthy skin,nerves and digestion.maize is also rich in minerals such as magnesium,which helps in bone breath and muscle function.

Millet(pennisetun glaucum)is an important cereal grain in Kwara state due to its resistance to drought and ability to grow in poor soil conditions.it is a good source of dietary fiber,proteins,and minerals like iron,which helps combat anemia.Millet is also rich in antioxidants,particularly phenolic compounds,which contribute to improved immune function and reduce the risk of chronic diseases.

Sorghum(sorghum bicolor)is another staple grain in Kwara state,offering a good balance of protein,fiber and vitamins m.it is particularly beneficial for smallholder farmers because it is resilient to drought and can be grown in areas where other crops may fail.sorghum is rich in phytochemical,which have anti-inflammatory properties and support overall health.

CHAPTER THREE

METHODOLOGY

3.1 STUDY AREA

This study focuses on Kwara state located on the North-central geopolitical zone of Nigeria. Kwara State lies between latitudes 7°45'and 9°30' north and longitudes 2°30' and 6°25' East. The state shares borders with Kogi State to the east, Oyo State to the west, Niger State to the north and Osun State to the south, with an international boundary with the republic of Benin.

Kwara State has a tropical climate characterized by distinct wet (April to October) and dry (November to march) seasons. Annual rainfall ranges from 800mm to 120mm, providing favorable conditions for agriculture. The state is known for the cultivation of grains such as millet, maize and sorghum, which are staple foods and significant sources of income for farmers. Agriculture is the primary economic activity, employing a large portion of the population. Farmers rely on various inputs, including fertilizers, fuel for mechanized farming, and transportation, which are sensitive to changes in fuel prices. With the removal of fuel subsidies, the cost of these inputs may significantly grain production.

The farming system in Kwara system in Kwara state is predominantly smallholder-based with farmers cultivating 1-5hectares of land. However, there are also medium and large-scale farmers. These systems involve both rain-fed and dry-season farming, with millet, maize and sorghum being major crops cultivated across the state's agro-ecological zones.

The choice of Kwara state as the study area is due to its significant role in grain production within the region, the diverse farming practices, and its representation of the impact of economic policies like fuel subsidy removal on agricultural productivity in Nigeria.

MAP OF NIGERIA INDICATING KWARA STATE

Source by: Akanbi, 2015

3.2 RESEARCH DESIGN

This study adopted a descriptive and explanatory research design.it was combined through quantitative and qualitative approaches to examine how the removal of fuel subsidies has affected grain production. The study focuses on identifying the relationship between fuel costs, agricultural input costs, and grain output overtime.

3.3 POPULATION Of THE STUDY

The target population comprises farmers engaged in the production of millet, maize and sorghum across Kwara state. This includes both smallholder and commercial farmers, as well as key stakeholders such as extension officers, agricultural input

suppliers and marketers.

3.4 SAMPLING PROCEDURE

The three stage sampling techniques was adopted for this study. The first was a purposive selection of 3 local government from the 16 local government in Kwara state because there are many Grain farmers there,the second was a random selection of 2 villages from each of the LGA selected while the last stage was a random selection of 20 farming household from each of the selected villages. This gave us a total of 120 respondents.

3.5 INSTRUMENT FOR DATA COLLECTION

For the purpose of this study, primary source of data was adopted, primary data was collected with the aid of structured questionnaire.

The structures questionnaire was self-administered to seek relevant information from the respondent on the topic of interest: ASSESSMENT OF FUEL SUBSIDY REMOVAL ON GRAIN PRODUCTION. The questionnaire contain both closed-ended and open-ended questions. Prior to completing the questionnaire, each respondent was requested to sign an informed consent form to confirm their readiness to participate in the research. Hence, data gathered from the responses of the samples was prepared for data analysis.

3.6 VALIDITY OF INSTRUMENT

Validity is concerned with how consistent an instrument could measure it purports to measure. content validity method was adopted for the purpose of the study.

Ten (10) questionnaire structured for this research was served to the lecturers including the supervisor, researchers and other expertise in the area of research study in department of Agriculture, Kwara state polytechnic for validation. The experts were asked to critically examine the instrument in terms of meeting the objectives of the

study, the use of tenses as well as clarity of words.Some items in the questionnaire were modified with the modifications of the items by the experts and its subsequent corrections by the researcher, the instrument was adjudged valid for the study.

3.7 DATA ANALYSIS

The method of analysis of the data collected involve the use of the following:

i. Descriptive statistic

Descriptive statistics is a branch of statistics, which deals with descriptive of obtained data on the basis of these descriptions, a particular group of population is defined for corresponding characteristics. The descriptive statistics include classification, tabulation, diagrammatic and graphical representation. if data, measures of central tendency and variability. These enable the researchers to know about the tendency of data or the scores, which further enhances the ease in description of the phenomena. such single estimate of the series of data which summarizes the distribution are known as parameters of the distribution. The parameters define the distribution completely. Descriptive statistics will be used to analyze objectives (1).

ii. Inferential statistics such as Regression and correlation analysis

inferential statistics deals with drawing of conclusions about large group of individuals(population)on the basis of observation of a few participants from among them or about the events which are yet to occur on the basis of past events.it provides tools to complete the probabilities of future behavior of the subject.

iii. Profitability test

The profitability test is a method to evaluate all products, not just financial and insurance. The profitability test will be used to achieve objective (2).

π =TR- TVC

=Total revenue - Total variable cost

=Net income.

iv. Ordinary least squares (OLS)

OLS regression estimates the relationship between one or more independent variables(predictors)and a dependent variable(response).it accomplishes this by fitting a linear equation to observed data. OLS regression will be used to obtain objective (3)

Y=f(x)

Income=Y

Cost of input=x

X=x1 x2 x3 x4___xn

X1——cost of fertilizer

X2____cost of transportation

X3_____cost of feed/machineries

X4____cost of miscellaneous fees

X5____cost of renting land

Xn_____

The OLS regression will be used to achieve objective (3).

v. Likert scale

The Likert scale is a type of rating scale is a measure instrument used to determine a respondent's attitude toward self, others or situations. The likert scale is typically used on surveys or questionnaires, which begins with a statement and ask individuals to respond on an agree/disagree continuum. Each response is assigned a point value; an individual's score is determined by adding the point values of all the statements. scale will be used to obtain objective (4).

Example: Strongly agree |Agree |Undecided |Disagree |Strongly disagree

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Socio-economic Characteristic of Respondents

4.1.1 Distribution of Respondents by Age

The table 4.1.1 below showed the distribution of respondents by their age.The table showed that 40.8% of the respondent fell between 31-40years,21.7% fell between 41-50years,15.0 fell between 51-60years,8.3 and 14.2 are 60years and above.

4.1.1: Frequency Distribution of Respondents by Age

Age		Frequency	Percent
Valid	<=30	49	40.8
	31-40	26	21.7
	41-50	18	15.0
	51-60	10	8.3
	Above 60	17	14.2
	Total	120	100.0

Field survey,2025.

4.1.2. Distribution of Respondents by Gender

The table 4.1.2 below showed the distribution of respondents by sex.The table showed that 73.3% of the respondents are male while 26.7% of the respondents are female.This indicates that majority of the green farmers in the study are male.

Table 4.1.2: Frequency Distribution of Respondents by Sex

Gender		Frequency	Percent
Valid	Male	88	73.3
	Female	32	26.7
	Total	120	100.0

Field survey,2025.

4.1.3 Distribution of Respondents by Martial status

The table below showed the distribution of respondents by their Martial status.The table showed that 59.2% of the respondents are married,29.2% we're single and 6.7% are divorced and 5.0% are widowed.This implies that majority of the respondents in the study are married and have a sense

of responsibility.

Table 4.1.3: Frequency Distribution of Respondents by Martial status

Marital status		Frequency	Percent
Valid	Single	35	29.2
	Married	71	59.2
	Divorced	8	6.7
	Widowed	6	5.0
	Total	120	100.0

Field survey,2025.

4.1.4 Distribution of Respondents by Educational Level

The table 4.1.4 below showed the distribution of respondents by their educational level.The table showed that 10.0% of the green farmers had no formal education,while 28.3% of the green farmers had secondary education,while 4.2% had tertiary education and 17.5% had primary education,while 35.8% had higher education.This implies that the grain farmers are literate.

Table 4.1.4:Frequency Distribution of Respondents by Educational Level

Level of Education		Frequency	Percent
Valid	No formal education	12	10.0
	Primary	21	17.5
	Secondary	34	28.3
	Tertiary	5	4.2
	Higher education	43	35.8
	Total	120	100.0

Field survey,2025.

4.1.5 Distribution of Respondents by household size

The table 4.1.5 below showed the distribution of grain farmers by their household size.The table showed that 50.8% of the farming household has household size of 5 persons and below while 36.7% has household size of 6-10 persons.This implies the majority of the respondents has a fairly large household size.

Table 4.1.5:Frequency Distribution of Respondents by Household size

Household Size		Frequency	Percent
Valid	<=5	61	50.8

	5-10	44	36.7
	Above 10	15	12.5
	Total	120	100.0

Field Survey,2025.

4.1.6 Distribution of Respondents by farm Size in Acres

The table 4.1.6 below showed the distribution of grain farmers by their farm Size in Acres.The table showed that 74.2% of the respondents operate on small scale farms of 5 acres or less indicating that grain farming in the study area is practiced at a subsistence or small holder level while 19.2% of farmers own between 6-10acres,while 2.5%,0.8% and 3.3% cultivate farms larger than 10acres.

Table 4.1.6: Frequency Distribution of Respondents by Farm Size in Acres

Farm Size in Acres		Frequency	Percent
Valid	<=5acres	89	74.2
	11-15acres	3	2.5
	16-20acres	1	0.8
	6-10acres	23	19.2
	More than 20acres	4	3.3
	Total	120	100.0

Field Survey,2025.

4.1.7: Distribution of Respondents by Farming Experience.

The table 4.1.7 below showed the distribution of respondents by farm experience.The table revealed that 60.8%,15.0%,4.2% and 20.0% of the farming household has farming experience of 10-20 years,20-30 years and above 30 years respectively.

Table 4.1.7: Frequency Distribution of Respondents by Farming Experience

Years of Farming Experience		Frequency	Percent
Valid	<=10years	73	60.8
	10-20years	18	15.0
	20-30years	5	4.2
	Above 30 years	24	20.0
	Total	120	100.0

Field survey,2025.

4.1.8: Distribution of Respondents by primary occupation.

The table 4.1.7 below showed the distribution of respondents by primary occupation.The table showed that 35.8% of Respondents identify grain farming as their primary occupation while 26.7% are involved in other farming activities while 19.2% are involved in trading While 14.2% work in the civil service while 4.2% reported other occupations outside the listed categories.

Table 4.1.8: Frequency Distribution of Respondents by their Primary Occupation

Primary Occupation		Frequency	Percent
Valid	Grain farming	43	35.8
	Other farming activities	32	26.7
	Trading	23	19.2
	Civil service	17	14.2
	Others	5	4.2
	Total	120	100.0

Field survey,2025.

4.1.9: Distribution of Respondents by Source of Income

The table 4.1.9 below showed the distribution of respondents by their source of income.The table showed that 58.3% of respondents derived their main source of income from farming while 20.8% of respondents earn their income through trading While 20.0% work in the civil service while 0.8% earn income from clergy-related activities.

Table 4.1.9: Frequency Distribution of Respondents by their Source of Income

Source of Income		Frequency	Percent
Valid	Farming	70	58.3
	Trading	25	20.8
	Civil service	24	20.0
	Clergy	1	0.8
	Total	120	100.0

Field survey,2025.

4.1.10: Distribution of Respondents by Farming System

The table 4.1.10 below showed the distribution of respondents by their Farming System.The table showed that majority of the respondents 58.3%, practice rain feed agriculture while 30.0% of the farmers engaged in mixed farming while 10.0% of Respondents use irrigation farming,while 1.7% reported using other type of farming systems.

Table 4.1.10: Frequency Distribution of Respondents by Farming System

Type of farming system		Frequency	Percent
Valid	Rain feed	70	58.3
	Irrigation	12	10.0
	Mixed farming	36	30.0
	Others	2	1.7
	Total	120	100.0

Field survey,2025.

4.1.11: Distribution of Respondents by Changes Made

The table 4.1.11 below showed the distribution of respondents by Changes Made.The tables showed that 33.3% of Respondents switched crops-likely opting for less input-intensive or drought-resistant varieties as a way to reduce cost while 20.0% of farmers changed input types,like substituting costly fertilizers, pesticides,or hybrid seeds with cheaper,locally available alternatives while 20.0% reported adopting new technologies,while 18.3% of the farmers reduce the land under cultivation likely to cut down on labor,fuel ,and input costs while 0.8% reported no change at all,showing that nearly all respondents had to make some form of adjustment while 7.5% indicates other unspecified changes.

Table 4.1.11: Frequency Distribution of Respondents by Changes Made

Changes Made		Frequency	Percent
Valid	0	1	0.8
	Reduced land under cultivation	22	18.3
	Switched crops	40	33.3
	Changes input	24	20.0
	Adopted technologies	24	20.0
	Others	9	7.5
	Total	120	100.0

Field Survey,2025.

4.2.1 DISTRIBUTION OF THE RESPONDENTS ON PROFITABILITY OF GRAIN PRODUCTION AFTER SUBSIDY REMOVAL

		Frequency	percent	Valid percent	Cumulative Percent

valid	Yes	95	79.2	79.2	79.2
	No	17	14.2	14.2	93.2
	Unsure	8	6.7	6.7	100.0
	Total	120	100.0	100.0	

The majority of respondents 79.2%,affirmed that grain production is still profitable despite the rising cost of inputs linked to the fuel subsidy removal while 14.2% of respondents reported that grain production is no longer profitable while 6.7% were unsure about the profitability of their grain farming experience.

STATISTICS

		Revenue	Cost of fertilizer	Cost of transportation	Cost of machineries	Cost of land	Cost of labor
N	Valid	120	120	120	120	120	120
	Missing	0	0	0	0	0	0
Mean		440775.00	36125.00	6625.00	42500.00	27625.00	19875.00

Gross Margin(REVENUE-TVC)

440,775-132750=308,025

The fact that the Gross Margin has 308,025 ,this means grain farming is profitable from the gross margin analysis .

4.3..1 DISTRIBUTION OF THE RESPONDENTS ACCORDING TO THE EFFECT OF FUEL SUBSIDY REMOVAL ON GRAINS

COEFFICIENTS

Model		Unstandardized coefficients	standardized coefficients		Sig.
		B	Beta		
1	Constant	4025164.408		1.031	0.305
	Age	18149.190	0.245	2.037	0.044
	Gender	155852.768	-0.062	-0.630	0.530
	Marital status	44969.891	0.030	0.284	0.777
	Level of Education	154362.084	0.203	2.120	0.036
	Household Size	-19529.577	-0.061	-0.575	0.566
	Cost of	-85.688	-0.561	-1.497	0.137

	Fertilizer				
	Cost of Transportation	-18.408	-0.078	-0.593	0.554
	Cost of	-33.890	-0.422	-0.906	0.367
	Cost of Land	-15.419	-0.161	-0.699	0.436
	Cost of labor	24.689	0.211	1.305	0.195

a.Dependent variable:Revenue

The table 4.3.1 showed that Age has a positive and statistically significant influence on revenue,this suggests that as farmers grow older,they'd experience or resource accumulation may lead to increased revenue from grain production while Level of Education is also positively significant,indicating that more educated farmers tend to earn higher revenue while all other variables (e.g gender,marital status, household size and various cost factors)are not statistically significant($p>0.05$),meaning their impact on revenue are not strong enough to be considered meaningful in this model.

4.4 DISTRIBUTION OF THE RESPONDENTS ACCORDING TO THE CHALLENGES ASSOCIATED WITH THE REMOVAL OF FUEL SUBSIDY

	Not severe	Moderate	Undecided	Severe	very Severe	Mean	Rank
Cost of Transportation	1(0.8)	3(2.5)	0(0)	41(34.2)	74(61.7)	4.53	1
Market price	1(0.8)	5(4.2)	21(17.5)	23(19.2)	70(58.3)	4.30	2
Cost of fertilizer	3(2.5)	1(0.8)	11(9.2)	58(48.3)	47(39.2)	4.18	3
Cost of Labor	3(2.5)	7(5.8)	17(14.2)	40(33.3)	50(41.7)	3.98	4
Cost of seeds	4(3.3)	2(1.7)	34(28.3)	38(31.7)	40(33.3)	3.85	5
Cost of storage	8(6.7)	5(4.2)	31(25.8)	30(25.0)	44(36.7)	3.76	6
Quantity provided	16(13.3)	6(5.0)	32(26.7)	30(25.0)	36(30.0)	3.53	7

The study shows that the cost of transportation,market price and cost of fertilizer are the most three(3) challenges associated with the removal fuel subsidy in the study area.These challenges were rates highest by respondents based on their severity level.

NS-Not severe -1

M-Moderate-2

UD-undecided-3

S-Severe-4

VS-Very Severe-5

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This study explored the impact of fuel subsidy removal on grain production among smallholder farmers in Kwara State, Nigeria. The research was initiated in response to growing concerns about the economic pressures farmers face due to rising fuel costs following the Nigerian government's decision to eliminate petroleum subsidies. Given that smallholder farmers form the foundation of grain production in Nigeria, any shift in fuel pricing policy has the potential to influence their productivity, profitability, and sustainability.

The study employed structured questionnaires to gather data from selected smallholder farmers across different local government areas in Kwara State. The findings reveal that the removal of fuel subsidy significantly increased the cost of several key components of grain farming, particularly those involving transportation and mechanization. Farmers reported that the prices of fuel, diesel, and associated services such as tractor hire and irrigation have risen sharply, making it difficult for them to operate as efficiently as in previous seasons. These increased costs, combined with limited income and lack of external support, forced many farmers to either reduce their scale of production or return to less effective traditional farming practices.

The study also found that the affordability and accessibility of essential agricultural inputs such as fertilizers, improved seeds, and agrochemicals have been severely affected. With higher transportation costs and the absence of government assistance to offset these expenses, most farmers now struggle to procure adequate inputs for their farms. This has resulted in lower crop yields, reduced income levels, and increased financial stress for rural households. In some cases, grain farmers have shifted to crops that require fewer external inputs, while others have begun to depend more heavily on non-farm income to support their families.

Moreover, many farmers expressed dissatisfaction with how the policy was implemented, noting that the subsidy removal was introduced without adequate preparation, consultation, or provision of cushioning measures. The general sentiment among respondents was that although the government's objective may have been to improve economic efficiency at the national level, the policy disproportionately affected smallholder farmers who lack the financial flexibility to absorb such sudden increases in production costs.

In summary, the study concludes that the removal of fuel subsidy has had a predominantly negative effect on smallholder grain farmers in Kwara State. It has led to higher operational costs, limited access to agricultural inputs, and declining productivity. As a result, farmers are finding it increasingly difficult to sustain their livelihoods, and many are adapting by either cutting back on production or seeking alternative income sources. These findings suggest an urgent need for targeted interventions to support smallholder farmers in adjusting to the new economic environment and maintaining food production in the state.

5.2 Conclusion

This study has provided a comprehensive assessment of the impact of fuel subsidy removal on grain production among smallholder farmers in Kwara State, Nigeria. The findings clearly demonstrate that while the removal of the fuel subsidy may have been aimed at addressing broader national economic challenges, it has had far-reaching consequences on rural agricultural livelihoods. For smallholder farmers who already face numerous constraints such as limited access to credit, outdated farming tools, and fluctuating market prices, the increase in fuel costs has introduced an additional layer of hardship.

The research showed that the removal of the subsidy has directly led to increased production costs across multiple areas of the farming process, including land preparation, transportation, irrigation, and post-harvest handling. These rising costs have made it increasingly difficult for farmers to operate at previous levels of efficiency and scale, leading to reductions in cultivated land, limited use of improved inputs, and, ultimately, lower yields. Furthermore, many farmers have reported reduced incomes and declining food security, with some being forced to scale down their farming activities or exit farming altogether.

The study also found that the policy was implemented without sufficient support mechanisms to protect vulnerable rural producers. Most farmers felt excluded from the decision-making process and expressed frustration with the lack of alternatives or compensatory programs. This has contributed to a general sense of neglect and discouragement within the farming communities studied.

In conclusion, while the removal of fuel subsidy may have been a necessary step for national economic reform, its implementation has exposed smallholder farmers to new levels of vulnerability. The findings of this study underscore the urgent need for government intervention in the form of agricultural support programs, rural infrastructure development, access to affordable inputs, and inclusive policymaking. Without such measures, the sustainability of smallholder grain farming in Kwara State—and by extension, national food security—may be significantly undermined. A more balanced and inclusive approach to policy implementation is therefore essential to ensure that economic reforms do not come at the expense of the livelihoods of rural farmers who contribute so critically to the nation’s food supply.

5.3 Recommendations

Based on the findings and conclusion of this study, the following recommendations are proposed to mitigate the negative effects of fuel subsidy removal on smallholder grain farmers in Kwara State:

1. Provision of Input Subsidies:

The government should introduce targeted subsidies for essential agricultural inputs such as fertilizers, improved seeds, and agrochemicals to help reduce production costs and support higher yields.

2. Access to Affordable Credit:

Financial institutions, in partnership with government agencies, should provide smallholder farmers with access to low-interest credit facilities. This will help farmers cope with rising costs and invest in necessary farm operations.

3. Improvement of Rural Infrastructure:

There is a need for substantial investment in rural roads, storage facilities, and irrigation systems to reduce logistical challenges and enhance market access for grain farmers.

4. Support for Mechanization Services:

The government should consider subsidizing farm mechanization services such as tractor hire and post-harvest processing to make them more affordable for small-scale farmers.

5. Promotion of Alternative Energy Sources:

Farmers should be supported in adopting renewable energy technologies such as solar-powered irrigation and milling systems to reduce dependency on fossil fuels.

6. Strengthening of Farmer Cooperatives:

Farmers should be encouraged to join or form cooperatives to improve their bargaining power, access input discounts, and benefit from shared resources and government support schemes.

7. Enhanced Agricultural Extension Services:

Extension agents should be well-trained and equipped to educate farmers on adaptive strategies, efficient input use, and climate-smart agricultural practices in the post-subsidy environment.

8. Implementation of Buffer Policies:

The government should create cushioning programs such as price support schemes or emergency grants for vulnerable smallholder farmers affected by sudden economic policy changes.

9. Inclusive Policy Dialogue:

Policymakers should engage directly with farmers and other grassroots stakeholders when developing and implementing agricultural or economic reforms to ensure that such policies are context-sensitive and socially inclusive.

10. Monitoring and Evaluation Mechanisms:

A robust system should be established to continuously monitor the impact of economic reforms on agriculture, enabling timely interventions and data-driven policy adjustments.

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