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PATHWAY FOR EMPOWERING WOMEN IN AGRICULTURE AND RURAL FOOD SECURITY IN NIGERIA

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ABSTRACT

Agriculture is a key sector of Nigeria's economy, accounting for more than 24 percent of GDP. The women account for over 75 percent of Nigeria's agricultural population and make substantial contributions to farm management and labour. However, despite the role of women in ensuring food security of families, especially in the rural areas of Nigeria, they remain vulnerable to disempowerment in terms of access to agricultural resources. Their deprivation of access to agricultural therefore, reduced their farm productivity which in return affect their household food security. This study review past studies on women empowerment and household food security using WEAI. The findings show evidence that empowering women in agriculture contribute to their household food security. Therefore, there need for national laws and policies that promote women's rights to own land, and have equal access to credit, extension to enhance their household food security, and reducing the gender disparities or discrimination will also generate significant gains for the agricultural sector.

Keywords: Causes of conflicts, ISM, ethnic tourism

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INTRODUCTION

It is depicted that women comprise half of the world's population and about 43 percent of the labour force in developing countries (Aziz, et al., 2020). Women presence in agriculture is rising globally with women working as farmers, unpaid workers on household farms and labourers in other agricultural establishments (Asadullah & Kambhampati, 2021). Women's input to food security and participation in agriculture has been widely acknowledged in the developing countries, and they play a key role in enhancing agricultural production and food security in the farming societies (Khatri-Chhetri, et al., 2020).

In many rural Africa economy, women play a central role in agriculture and their presence is obvious in the farming and marketing of farm produce (Amusan, Akokuwebe & Odularu, 2021). For instance, data gotten from Food and Agriculture Organization reveals that women make up about 50 percent of agricultural labor force in Africa. Therefore, their agricultural labor is extreme as they work on their family farms and as labourers in other people's farm to get paid (Atinkut et al., 2022). Additionally, women occupy a dominant position in subsistence agricultural labour force, constituting two-thirds of smallholders and 60 percent of all agriculturalists. They have persistently participated in agriculture, making significant contributions to agricultural production, food security and nutrition, hence, they help in ensuring and strengthening their household food security (Bassey, et al., 2023). They are also responsible for most of the tasks in the farm such as ploughing the fields, removing

weeds, monitoring the crops and harvesting them (Bulus, Nyor & Usman, 2024).

Due to the limited potential for industrialization in many sub-Saharan Africa countries, agricultural growth has been broadly seen as a more viable means for sustainable economic growth and means of reducing poverty in many countries because agricultural growth can enhance economic diversification and limits dependence on food importation (Ecker & Hatzenbuehler, 2022). Agriculture is the most important and ancient human vocation. It includes cultivation of soil to grow crops and raising of animals to produce food, wool, and other goods for individual or public use (Afolabi, et al., 2021). Agriculture guarantees a crucial number of ecosystems, such as food supply as a result, agriculture promotes the Sustainable Development Goal and is essential for food security (Viana, et al., 2022). It remains the backbone of the economies of many African nations and approximately 60 percent of export incomes are from agriculture, and over 76 percent of the 987 million Africans living in rural areas are working in agriculture (Langyintuo, 2020). Hence, agriculture plays a critical role in ensuring food security, eliminating poverty, and supporting rural development. The vast majority of the world's 3.0 billion poor rely on it as their primary source of income.

In Nigeria, agriculture is generally considered as the pillar of the economy with various roles towards achieving economic development. The roles include provision of adequate food for its growing population, supplying adequate raw materials for the rising manufacturing industry, provision of employment and

creating a major source of foreign exchange (Adeleye, Osabuohien & Asongu, 2020). Like most other developing countries, agriculture is a central economic sector and the main source of employment in Nigeria, it contributes about 70 percent share of the labour force and 23 percent to gross domestic product (GDP) (Balana & Oyeyemi, 2022). However, recently, the Nigeria agricultural sector is lacking behind, and the reason is attributed to the marginalization of women who represent a crucial and fundamental resource in the sector (Apeh, et al., 2023). Several studies have assessed the impact of empowering women farmers, example of such studies includes Asogwa, Omah & Asogwa, 2020; Azunna, 2020; Kehinde, et al., 2021; Aziz, et al., 2021; Asadullah & Kambhampati, 2021 and many others. However, this study will contribute to literature and the entire body of knowledge by analysing the possible ways or dimensions women farmers can be empowered in Nigeria to enhance the country's economy, particularly those in the rural areas.

Women make up half of the Nigeria rural population and they constitute more than half of the agricultural labour force, their roles and contributions towards improving agricultural productivity and food security cannot be overstated (Khatri-Chhetri, et al., 2020). Furthermore, it is depicted that in most rural families in Nigeria, mothers are responsible for the provision of food to family members and for the nutritional outcomes of children (Aziz, et al., 2021). In fact, it is stated that women can reduce approximately 95–100 million of the undernourished population globally by acting as food producers as well as caretakers to guarantee household food security and nutrition (Aziz, et al., 2020).

Since food security in most rural areas depends on the agricultural industry, and farming is regarded as their primary source of household's income and nutrients (Aziz, et al., 2021). Women involvement in agriculture is crucial because they are also responsible for most of the tasks in the farm such as ploughing the fields, removing weeds, monitoring the crops and harvesting them, then they will use the money they realise from their farming activities to cater for the various family needs thereby promoting their livelihood and consequently contribute to food security of their community at large (Bulus, Nyor & Usman, 2024).

However, despite the overall efforts of women farmers towards agricultural growth, improvement in the general well-being of their families and communities on account of food and nutrition security, income generation, and advancing rural livelihoods, women farmers have continued to face various limitations that hinder their efforts towards improving their lives and those around them (Bulus, Nyor & Usman, 2024). They face challenges more than men in gaining access to agricultural resources such as land, credit and improved farm inputs. Thus, their lack of access and ownership to land, credit and gender inequality are the major obstacles preventing them from improving their expertise on crop and food productions (Ufondu, et al., 2021).

The gender differences among farmers in Nigeria allows greater resources accessibility to men while women farmers face diverse deprivations which continuously limit their agricultural produce and development (Adegbite & Machethe, 2020). Additionally, the gender

variation which is due to socially perceived discrimination between men and women hinders women's acquisition and control of agricultural resources. Thus, women farmers often encounter several challenges in accessing land for agricultural purpose because of cultural, social, and economic barriers (Ankrah, Freeman & Afful, 2020). For instance, Daudu, et al., (2022) stated that the gender disparity in accessing farmland is high in Nigeria because of many norms and cultural custom that prioritize men over women. As a result, men traditionally own more land than women in terms of ownership structure. Accordingly, women productivity in agriculture is often limited due to their inadequate access to productive resources such as land, labour, fertilizer, capital, improved seed, and services, which in return affects the women and the food security of their household (Gebre, et al., 2021).

Consequently, agricultural productivity remains low in Nigeria due to inadequate use of agricultural inputs and technologies like fertilizer and improved seeds, limited access to extension services and credit especially among the women farmers (Balana & Oyeyemi, 2022). Hence, many farming families are exposed to a high risk of food insecurity, poverty, lack of income and many other barriers to self-sufficiency, which has presented the rural families with many challenges (Olive, Aloysius & Beauty, 2020).

Additionally, Nigeria placed 107th out of 113 countries and 25th out of 28 sub-Saharan Africa (SSA) countries who are experiencing hunger (Otekunrin, Mukaila & Otekunrin, 2023). For instance, report from the 2023 Global Report on Food

Crises shows that Nigeria is one of the West African nations dealing with food insecurity. It is predicted that 12.1 million Nigerians are experiencing food insecurity, and if government initiatives and humanitarian aid did not step up to take the necessary actions, the number might rise to 16.9 million (Ojo et al., 2024). Furthermore, food prices and availability have drastically decreased in many Nigerian states. The food insufficient in terms of quantity and quality, therefore, leads to undernourishment and hunger in the country (Esheya, Ogbonna & Nwandu, 2024).

Therefore, there is need to empower women in agriculture because empowering woman as a member of a deprived household, will in return impact the entire household (Wei, et al., 2021). If the small-scale women farmers are empowered and provided with all the equipment, information, and agricultural inputs they require, it will be quite easy to achieve a nation that is food secure, which is every nation's goal (Nwali, et al., 2022). The contemporary international development policies have not only realized the role of agriculture in reducing poverty and guaranteeing food security but are as well demanding an integration of women into these policies and a focus on the eradication of gender inequality (Prügl & Joshi, 2021). Thus, to limit food uncertainty and poverty among the rural people and Nigeria at large, women need to be fully empowered to become self-reliant (Asogwa, Omah & Asogwa, 2020). By promoting gender equality which is generally acknowledged in contributing to agricultural productivity and consequently to food security. Additionally, ensuring greater gender equality will increase households' food

security thereby obtaining the significant concern of the global rural development policy agenda which aim at attaining the first and second United Nation's goals of no poverty and zero hunger (Ashagidigbi, et al., 2022). Since the goal of the 2030 Agenda for Sustainable Development is to reduce the number of people living in severe poverty and hunger by half by 2030, and smallholder farmers are recognised as a crucial instrument in achieving this objective (Ahmed & Ahmed, 2023). Therefore, every effort by national governments and the international community towards achieving their objectives for agricultural development, economic growth and food security will be strengthened and enhanced if only women

Contribution of women farmers to Nigeria agriculture

Just like most other developing countries, agriculture remains the major economic sector and the main source of employment in Nigeria which contributes about 70 percent share of the labour force and 23 percent to gross domestic product (GDP) (Balana & Oyeyemi, 2022). Nigeria is predominantly gifted with abundant land, water resource, human and forestry resources required for farming (Opeyemi, et al., 2021). Consequently, agriculture is generally considered as the backbone of the economy because of its various roles towards achieving economic development. Most of the relevant roles of agriculture in enhancing development in the country include provision of sufficient food for its growing population, supplying adequate raw materials for the rising manufacturing industry, provision of employment and creation of a major source of foreign

empowerment projects produce the desired results (Mela, Paul & Yakubu, 2024).

Accordingly, agriculture as one of the most important sectors in Nigeria needs to be groomed to attain economic development. Additionally, productive efforts need to be put in place to make sure that the sector is restored into its best condition and make it competent enough to limit the poverty level of the country into a significant level (Folarin, et al., 2021). Hence, the need to empower women farmers, sine empowering women in farming has the possibilities of sustaining their productivity, increase their household food security, as well as elevating their economic level (Ogbari, et al., 2024)

exchange (Adeleye, Osabuohien & Asongu, 2020).

Women make up half of the Nigeria rural population and they constitute more than half of the agricultural labour force, their roles and contributions towards improving agricultural productivity and food security cannot be overstated (Khatri-Chhetri, et al., 2020). Most of these women reside in rural areas and participate in agriculture as their major source of earning a living, their involvement in agricultural activities is very significant in reducing poverty as well as improving the family's economic status (Mukaila, et al., 2022). The rural women farmers have been contributing massively to agricultural development in Nigeria, they have been actively involved in farming activities such as crop and livestock production, processing and marketing of agricultural products (Bulus, Nyor & Usman, 2024). They also play a key role in food production and food security, intrinsically they are seen as the pillar of

rural development and national economies (Belonwu, et al., 2023). The United Nations defined food security as ability of people to have constant physical, social, and financial access to enough safe, nourishing food that satisfies their dietary needs and food choices for an active and healthy life. The definition includes the four well-known pillars of food security: stability, availability, accessibility, and utilisation. The four pillars are crucial for comprehending food security at all scales, including individual, household, and regional (Otegunrin, Mukaila & Otegunrin, 2023).

Nigeria's food insecurity situation is rated as severe in the severity chart based on the 2020

Global Food Security Index. Even though over half of all jobs in Nigeria are related to agriculture, the Federal Ministry of Agriculture estimated in 2014 that 65 percent of the population are food insecure (Ojo et al., 2024). However, agriculture is a key sector of Nigeria's economy, accounting for more than 24 percent of GDP with women accounting for over 75 percent of Nigeria's agricultural population and making substantial contributions to farm management and labour (Ogbari, et al., 2024). Additionally, statistics reveals that about 80.2 million Nigeria population are women and girls, which is approximately 50 percent of the population (Asogwa, Omah & Asogwa, 2020). And over 50 percent of these women in Nigeria live in a rural community where they struggle highly to earn a living, through farming and house gardening as their major livelihood (Itunnu & Joseph, 2021). Their efforts have promoted self-sufficiency in the basic food production and an increase in the production of agricultural raw

materials. Also, the joint efforts of these women have resulted to an enhancement in the living standard of the rural communities. Their initiatives in agriculture have become a means of living for 75 percent of individuals in rural communities, and this has lowered the number of people who live in poverty in the rural community (Nkpoyen, et al., 2021). Thus, women farmers are seen as the key to growth in the rural and national economy since they play an exciting role in food production and food security of the country, they are also generally responsible for the numerous stages of food processing and food preparations in their household (Ugwu, 2019).

Challenges faced by women farmers in Nigeria

Women around the world have continued to suffer numerous levels of deprivations, discriminations, marginalization, abuses and intentional denial of their rights, though the extend to women prejudice is different according to each country (Okoi, et al., 2022). Despite the significant role women play in rural areas, where they carry out about 40 percent of agricultural tasks which are essential to the production of food, their contributions are not fully recognised, which restricts their ability to fully influence Nigeria's socioeconomic development (Obinna & Onyendi, 2024). There is a noticeable partiality in favour of men regarding access to and ownership of land, agricultural technology, training, financial services, information and all resources connected to agricultural productivity (Joshua & Omahas, 2023). And all these problems limit the quantity of farm produce among the women farmers (Ayodeji, Rauf & Loblely, 2021).

In Nigeria agricultural sector, women have continued to experience an enduring discrimination in the allocation and control of productive resources, despite their indispensable roles in sustaining the family by ensuring food security at the household level and the society in general. They frequently face variety of obstacles such as compressed cultural practices, unfair laws and highly uneven labour markets which has limits them from achieving their full potential (Ashagidigbi, et al., 2022). Although women play an important role in ensuring food security for their families, they remain vulnerable to disempowerment from numerous social and economic perspectives in society, and they are unable to speak out for human rights (Wei et al, 2021). Resource and opportunity constraints them from enhancing their farm produce and their deprivation of access to agricultural labour both in terms of labour quantity and quality has limits the productivity of the farms which they manage (Pierotti, Friedson-Ridenour & Olayiwola, 2022). This issue is attributed to gender inequality in access to, and application of productive resources such as land, financial services, technology and extension services (Ayodeji, Rauf & Lobley, 2021).

Gender refers to the roles, behaviours, activities, characteristics, and opportunities that a society thinks proper for boys and girls, as well as women and men. Gender interacts with but differs from biological sex's binary classifications. Gender is also defined as the state of being male or female. In contrast, inequality is characterised as being unequal or unfair. Gender inequality is defined as the discrepancy between male and female genders. The definition of inequality is broad; it encompasses the

entire population and includes those living below a certain poverty line (Adeosun & Owolabi, 2021).

The gender differences negatively influence their access to agricultural resources and services thereby limiting their productivity and subsequently the food and nutrition security of their households (Ashagidigbi, et al., 2022). The following are the major challenges of women farmers in Nigeria:

1. Land inequality

Land provides a foundation for production of crop. Therefore, availability of land for agriculture is pivotal to adequate food production and livelihood security (Daudu, et al., 2022). However, Women farmers are not given full access to agricultural resources, they do not have access to land which they need to involve into mechanized farming, for this reason most women farmers practice subsistence farming which is mainly practiced in the rural communities thereby limiting their contributions to the accomplishment of wider societal goals (Asamu, et al., 2020). Despite the decree of gender-free laws in many Africa countries, women are still consistently denied the access to land in many parts of the Africa continent. The Africa culture as one of the major determinants of the distribution of responsibilities and resources among men and women assumed men the custodianship of land for agricultural purposes while women are largely excluded from land ownership which has curtailed agricultural productivity among the women folks (Akinola, 2018). Women farmers only obtain land use rights from their husbands in most African countries, especially in the eastern part of Nigeria, so this denies them the personal rights to control and use the

land. Hence, this makes it difficult for the women farmers to acquire land for agricultural production (Ahmed & Fasilat, 2020).

The land tenure system in Nigeria, which is mainly based on communal ownership, inheritance, rent, tenancy, acquisition, gift or promise does not favour women because the communal lands are normally shared among the men by themselves during the planting seasons and only the male child in the family has the right to inherit land property in Nigeria. As a result of these, women find it hard to access land for agricultural purposes because culture bound most of them to be submissive to the men and as such, they only farm as hired labourers (Apeh et al., 2023).

Therefore, the farmers standard of living and livelihood security in the rural areas are considered as major issues. Small-scale farmers who are mostly women sometimes struggle to meet their basic needs due to their inability to produce in large quantities (Omodero, 2021). They face several limitations which hinders their efforts toward improving their lives and that of their family's (Bulus, Nyor & Usman, 2024).

2. Lack of agricultural credit

Agricultural credit facilities can be in the form of a loan or overdraft which is made obtainable for farmers to enable them to increase their productive capacity to improve their incomes, which will in turn minimise their financial risks, susceptibility, poverty and deprivation (Gershon, et al., 2020). Women farmers in Nigeria contribute remarkably to agricultural activities particularly in the areas of processing and marketing but they lack enough funds to increase their

operation level from small scale to large scale (Mukaila, et al., 2022). But a large proportion of these women farmers do not have enough access to land (Kehinde et al., 2021). Therefore, they lack acceptable collateral with which they can access credit facility from the formal institution (Uche, Ekene & Miebi, 2024). Accordingly, the low access to credit and income among the women farmers present them with so many challenges which limits their complete participation in the agricultural production (Asamu, et al., 2020). Rural women farmers contribute to the provision of family's basic needs, welfare, community development as well as the economic development of a nation, therefore low income among them reduces the income of the household and increase the likelihoods of a high poverty rate in the family (Ashagidigbi, et al., 2022).

3. Inequality on agricultural extension services

Agricultural extension services help farmers to enhance the efficiency and efficacy of their production by transmitting new technology through training, visits, and farm school. An effective agricultural extension service improves farmers' technical practices, such as fertiliser use, resulting in more efficient decision-making and improved outcomes for farmers (Amoussouhou, et al., 2024). However most women farmers in Nigeria are marginalized and excluded from extension services and other productive resources, which negatively impacts their agricultural efficiency and productivity and essentially undermines agricultural development agendas (Adebayo & Worth, 2024).

4. Low education

There is a gender inequality when it comes to education in Nigeria, women have less access to education more than their male counterpart. The main causes of the high prevalence of illiteracy among women in some parts of Nigeria is attributed to societal constraints and pressure placed on women such as early marriages and other related issues like early pregnancy. Additionally, there is a belief that women education should come second to men's own, and some restrictive religious practices (Mezie-okoye, 2021). As a result, farmers especially women farmer in Southern Nigeria still rely on traditional knowledge and experience to make decisions about their farming practices (Ifeanyi-obi, Henri-Ukoha & Familusi, 2024).

Nonetheless, Nigerian governments have implemented several measures to manage agriculture's chances of maintaining the nation's food supply and turning it into a major exporter. The National Food Acceleration Production Programme (NAFPP), the Directorate of Food, Road and Rural Infrastructure (DFRRI), Operation Feed the Nation (OFN), the

Conceptual definition of empowerment

The definition of empowerment varies across many disciplines and the meaning given to it differs among diverse fields and perspectives. Thus, making it difficult to have a clear and general definition of the word empowerment (Tengland, 2008). However, according to Kabeer, (1999) the concept of empowerment is unavoidably connected with the condition of disempowerment, hence, he refers to empowerment as the processes by which individuals who have been denied the ability to make choices acquire such ability

Green Revolution, and numerous more initiatives are examples of these tactics (Omodero, 2021). The major reason the efforts of the past initiatives fail in addressing the issue of hunger and promoting rural incomes was attributed to the lack of attention given to women as farmers, producers and farm workers. Also, most of the policies focused mainly on increasing agricultural productivity on the farm rather than promoting the value addition process of farm produce (Asogwa, Omah & Asogwa, 2020). The Nigerian government has put policies and initiatives like the National Gender Policy and Strategic Framework into place to promote gender equality generally, but these efforts haven't had much of an impact because gender inequality gaps are still very much in place in Nigeria. The Agricultural Development Programs' (ADPs), Women in Agriculture (WIA) policy directive and the Gender Policy in Agriculture both aim to promote gender equality and women's empowerment in the agricultural sector, but they did not record much impact although little progress has been seen (Adam & Njogu, 2023).

to do so. This implies that empowerment involves a process of change. For the better understanding of the concept of empowerment, it is important to understand the concept of power. Power can be perceived in terms of people's capacity to make strategic life choices and exercise control. Empowerment therefore refers to the processes by which this capacity is acquired by those who have been previously denied of it (Kabeer, 2010). Empowerment refers to a process whereby people's ability to make a deliberate life choices are expanded particularly in those areas where this ability was initially denied.

The ability to exercise choice can be thought of in terms of three interrelated dimensions: resources (pre-conditions), agency (process) and achievements (outcomes). Kabeer, (2005) defined agency as the processes by which choices are made and put into effect, resources are the means through which agency is exercised while achievements refer to the outcomes of agency.

The rationale for women empowerment is not mutually limited from Kabeer's idea of empowerment rather, they underpin each other emphasising on the need to close the gender gap in assets allocation and ownership thereby allowing women to own and control productive assets which will increase both their productivity and their self-esteem (Alkire, et al, 2013). Women's empowerment has been a main concept and major goal in development discourse since the 1990s. And there has been a strong narrative connecting women's empowerment with increased agricultural productivity and food security (O'Hara & Clement, 2018). In international food security and development discourses, empowerment of women has been formulated as a relatively straightforward and recognized objective which aim to increase women's agency. In agricultural sector, an empowered women can become more effective farmers, more productive food producers, and better income managers. Women's empowerment in the Global South is therefore expressed through individual actions; it has been associated to greater individual control over income and bargaining power within the household and a greater role for women in decision-making (O'Hara & Clement, 2018). Evidence from many studies has shown that women are often denied access

to productive agricultural resources in most Africa countries, Nigeria inclusive because of cultural norms which placed men superior to women. Example of these studies are Apeh et al., (2023), Asamu, et al., (2020) and many others. The findings of these studies shows that women disempowerment on access to agricultural resources such as land and credit contribute to low crops productivity when invariably reduce their household food security.

However, to empower women in agriculture and to enhance productivity in agriculture including sustainable development Goals two, which aim at eradicating all forms of hunger, women must have access to resources that may be used to produce agricultural produce (Owoicho, et al.,2023).

Ways through which women can be empowered on agriculture in Nigeria

It has been revealed that one of the major challenges of women in agriculture in Nigeria is inequality in accessing land resources (Asamu, et al.,2020). Which is attributed to patriarchy system that is operational in the country. Accordingly, lands are communally owned, and the communal lands are normally shared among the men by themselves during the planting seasons and only the male child in the family has the right to inherit land property (Apeh et al.,2023). As a result, women are vulnerable when it comes to land for agricultural purposes (Ahmed & Fasilat, 2020). However, Daudu, et al., (2022) highlighted that land is a significant factor of production in the agricultural sector, and millions of poor people who lives in rural areas depending on agriculture, livestock, or forests needs a

safe access to productive land for their livelihood. Additionally, land is a vital element in agricultural production. Thus, the ability of one to have full access to land for cultivation of agricultural foods and crops is determinant factor to adequate food production and livelihood security. But when there is inadequate and inequality in accessing land for agricultural purposes, farming activities will remain at a subsistence level. Therefore, to empower women and achieve growth in agriculture including sustainable development Goals two, which aim at eradicating all forms of hunger, women must have access to resources that may be used to produce agricultural produce (Owoicho, et al., 2023).

Another significant pathway of empowering women on agriculture in Nigeria is through financial aid or financial accessibility. This is because credit access is one of the essential factors for attaining sustainable economic activity in any nation. In agricultural production, it will lead to more agricultural productivity by enabling the farmers to access the essential farming inputs such as fertilizer, land, better seedlings, machinery, and storage facilities to avoid post-harvest waste (Sulaimon, 2021). Hence, access to formal credit is essential for empowering women farmers and advancing agricultural development in Nigeria, since women farmers play a vital role in food production and food security and they are therefore, seen as the backbone of the development of rural and national economies (Nnamani & Iwezor-Magnus, 2022). Women empowerment through access to credit is considered a crucial factor for sustainable development strategies in developing countries like Nigeria (Akhter & Cheng, 2020). Since

farmers particularly women frequently lack the financial means to increase the amount of power and mechanisation they utilise on their farms. And since expanding investment in agricultural mechanisation requires having access to some kind of funding, and this could improve Nigeria's food security (Ntagu, Nyam & Promise, 2022). Therefore, it is necessary to empower women farmers through access to formal credit which will aid the advancement of agriculture in Nigeria (Nnamani & Iwezor-Magnus, 2022).

Another important way through which women can be empowered in agriculture is through training and extensions services. Extension in a broader sense refers to an informal educational function that relates to any organization disseminating information and advice to promote learning. Agricultural extension plays a significant role in community development. Its role in testing and disseminating research-based agricultural knowledge and technology to rural people results in improvements in the agricultural sector (Maulu, et al., 2021). Agricultural extension service has been shown to build farmers' agricultural knowledge and skills, distribute new technology and change farmers' attitudes as well as promote community development through human and social capital development, facilitate access to markets and work with farmers towards sustainable natural resource management (Antwi-Agyei & Stringer, 2021).

Extension approaches" refers to how knowledge and skills are shared with farmers. This could be done through champion or model farmers, farmer field schools, training, and visits or participatory approach, to name but a few that have been used in extension. Although extension

programs may be planned and conveyed in different forms, the goal remains the same, which is to increase farmers' productivity and income (Maulu, et al., 2021). In agriculture, women have been shown to be more deprived of information regarding good agronomic practices, hence they are likely to benefit from more inclusive agricultural extension models, as they face information deficiencies and asymmetries relative to men in a range of circumstances. (Lecoutere, Spielman & Van Campenhout, 2023).

METHODOLOGY

This study reviewed past studies on women empowerment in agriculture using WEAI model. The Women's Empowerment in Agriculture Index (WEAI) is a new survey-based index formulated to measure women's empowerment, agency, and inclusion in the agricultural sector. It was initially developed to reflect the empowerment of women empowerment in the US government's Feed the Future Initiative, which led to the development of the WEAI. However. The adaptation of WEAI or adaptations can be used more generally in assessing the state of empowerment and gender parity in agriculture, to identify the major areas in which empowerment needs to be strengthened, and to track progress over time (Alkire et al, 2013). The WEAI uses 5 domain of Empowerment index to assesses the degree to which women are empowered. The 5D includes the following: (1) agricultural production decisions, (2) access to, and decision-making power over, productive resources, (3) control over use of income, (4) leadership roles within the community; and (5) time allocation. The 5DE is built from individual-level empowerment scores,

which reflect each person's achievements in the five domains. Therefore, a woman is defined as empowered if she has adequate achievements in four of the five domains or has achieved adequacy in 80 percent or more of the weighted indicators (Malapit, et al, 2017).

For instance, the study conducted by Ayodeji, Rauf & Lobley, (2021) using WEAI indicator found that in agricultural production decisions (which is the first of the 5D), 72 percent of the women are disempowered. This implies that most of the rural women have no or few inputs in decisions regarding their farming activities. In other words, they cannot decide what to plant, when to plant, and how to plant. With respect to asset ownership indicator under the resource domain, only few women have agricultural land and/or residential land. Their lack of landed property also affects their ability to access credit facilities from formal institutions. In the membership domain, (43 percent) of women enjoys adequacy in access to credit in the group membership indicator.

Similarly, the findings of Obayelu, Jimmy & Ojo, (2024) revealed that the 5DE for Nigeria indicates that only 6.6 percent of women were empowered in the study area, the 93.4 percent of unempowered women had inadequate achievements in 61.1 percent of the domains. Less than a quarter of the women were empowered in the five domains, while more than half do not have gender parity with the primary male in their household. The findings indicate that achieving gender equality is therefore essential for achieving the sustainable development goal of zero hunger in Nigeria. Also, the finding suggest that women's empowerment in the five domains

positively affected food security along the classes of zero hunger, mild hunger and moderate hunger and negatively affected food security in the class of severe hunger.

Furthermore, the study of Ogunnaike, Shittu & Kehinde, (2019) analysed the effect of women empowerment on household food of Ogun state of Nigeria. In the findings, the 5DE for Ogun State shows that 22.9 percent of women and 58.1 percent of men are empowered. This shows that there is unequitable distribution of productive resources among men and women in Ogun State.

CONCLUSION

The study highlighted the significant contribution of women in Nigeria agriculture. A large proportion of women especially those residing in the rural part of Nigeria participate in agriculture as their primary source of living, but they often lack most of the agricultural resources needed to enhance the growth of agriculture in the country as well as their household livelihood, which also stands as barriers against their achievement of a larger farming scale and productivity. Intrinsically, their inability to produce in large quantity has a great effect on the food security of the rural households, their standard of living and the Nigeria economy at large. This study recommend equitable distribution of productive resources among men and women in agriculture should be encouraged by stakeholders working on empowerment in order to enhance the household food security of the rural communities.

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