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ASSESSING THE EFFECTIVENESS OF NIGERIAN AGRICULTURAL PROMOTION POLICY THRUSTS IN ACHIEVING A SUSTAINABLE FOOD SYSTEM

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Abstract

To diversify the Nigerian economy and reduce dependency on food import, the Agricultural promotion policy (APP) was developed and implemented in 2016. This policy aims to move Nigerian agriculture to a commercial sector to ensure the creation of sustainable jobs and wealth. However, little is known about the effects of the policy on biodiversity, dietary diversity, and employment and income of the small-scale farmers who form the greater proportion of the food producers. The study aims to assess the effectiveness of APP in achieving social justice particularly for small-scale farmers, environmental sustainability and economic viability through sustainable agriculture. To assess the effectiveness of APP, focus groups discussions were held in six local governments in the North East geopolitical zone of Nigeria. APP food security thrusts of strategic national food reserve, proper use of agrochemicals and tractors, focus on forest food harvest and government support for large scale and specialised farms are very effective for securing food price stability. Moreover, food crop fortification is very effective in providing income support for households as it is the focus on forest food harvest, and access to credit and labour subsidies for small farmers. Encouraging organic farming is very effective in securing access to and availability of diversity of food, biodiversity and employment. Food diversity, soil fertility, biodiversity and employment also benefited from the provision of credit and labour subsidies. The outcome of this discussion is important for shaping the Nigerian food system. Though the APP thrusts are geared towards achieving sustainable development, Nigerian policy authorities should focus more on encouraging organic farming, credit and labour subsidies for the smallholder farmers, creating balance diet awareness, and forest preservation and food harvest to achieve food security, environmental sustainability and employment.

Introduction

From production to consumption of food, there are many subsystems, activities, elements, interactions and relationships that determines our food today. It is important to understand how different actions, activities, decisions, and systems component interactions and the outcomes of these interactions affects the sustainability of the food system. Achieving food security under sustainable environment has become necessary due to evidence of double-edged problems of obesity and malnutrition (Food Research and Action Center, 2015). There is also increasing hunger and poverty with rising unemployment in the face of fast technology advancements as in the case of Nigeria (Akinbobola & Saibu, 2004). The rising unemployment and poverty, especially for the youths calls for a practical way of solving the problems of food insecurity in Nigeria.

Food security Policies have changed with every new government in Nigeria (Iwuchukwu and Igbokwe, 2012). The rising food and nutrition insecurity couple with increasing poverty, and unemployment rate (Akinbobola & Saibu, 2004), show that these policies have failed not only in achieving their target but have other unintended consequences. The Agricultural Promotion Policy (APP) of Nigeria is geared towards achieving food security under sustainable development context (Federal Ministry of Agriculture and Rural Development, 2016). This policy goal is harder to achieve considering the number of poor people and devastated lands in Nigeria. APP which replaced the Agricultural transformation Agenda (ATA) of 2011 was developed in 2016, with focus on food security, import substitution and job creation, in addition to environmental sustainability. These two policies, ATA and APP aimed at moving Nigerian agriculture to a commercial sector to ensure the creation of sustainable jobs and wealth. However, little is known about the effectiveness of these policies on biodiversity, dietary diversity, and welfare of the small-scale farmers who form the greater proportion of the food producers (Sabo *et al.*, 2017; FAO, 2018).

Recognising the complex problems of food insecurity, there is need to explore participants' opinions at the household level on the food security policy and its effectiveness in meeting its target. Discussing the directions and strengths of these policy thrusts at the grassroots level where food decision making happens will help policy makers understand the food system better.

The present study specifically assessed the effectiveness of APP food security thrusts in achieving food price stability, increase availability of and access to diversity of food, increased biodiversity and environmental benefits like clean air, increase employment for the poor, income support for the poor farmers, and improved soil health. A food production system will be considered just if it provides greater benefit to the poor and vulnerable groups in the society, reduce poverty through food security while providing a broader economic opportunities for development (von Braun, 2003). The study adopted a qualitative research methodology to explore the effectiveness of APP food security in achieving sustainable food system.

Material and Methods

Setting and Participants

The research was carried out in Taraba and Gombe state located in north east geopolitical zone of Nigeria. The zone is plagued with food insecurity and *Boko haram* insurgency. In the North East, 83.6% and 68.6% of the households are involved in crop and livestock farming respectively. There are multiple languages used in this region, with Taraba state alone having over 80 languages (Online Nigeria, 2003). After consulting with the Agricultural Development Project offices in Gombe and Taraba State, two enumerators conversant with the area of study were contacted. The areas selected for the study covered three agricultural zones in each of the state. The focus group participants were adult males and females. The inclusion criteria required that participants were over 18 years of age, responsible for their household's food provisioning and actively involved with their household and farm decision making. The participants were informed about the study a week before the meeting and a reminder sent a day before the discussion. Each identified participant who expressed interest was met by the enumerators to inform them of the topic of the discussion.

Two young natives of Taraba State fluent in both the multiple languages of Taraba and Gombe and English led the discussion alongside the researcher¹. These fieldworkers were trained for three days in qualitative research methods and research ethics. The discussion guide was used for the training. Back translation was used to ensure the accuracy and consistency in the meaning of the key terms in the discussion guide. A total of 33 participants distributed 5 -7 persons per group were involved in the study across the six study sites. Informed consent was obtained verbally from each participant in their preferred language. The discussions were transcribed verbatim traditionally to English language.

Results and discussions

Discussions were made around the effectiveness of ten selected food security policy thrusts of the APP. The discussion explored how effective these policy thrusts are in achieving desirable sustainable food system goals of food price stability, access to and availability of diversity of food for improved nutrition of households, biodiversity and improved

¹ The discussions were conducted largely in Hausa, Jukun, Tiv, Fulani, Tangale, Broken English and Mumuyi languages with occasional translation to and from English.

environment benefits, increase employment for the poor farmer, improved soil health and providing income support for poor households. So, each policy was assessed on the basis of its effectiveness in achieving these goals. To guide the discussion, the effectiveness of each policy was determined by the participants using a scale. Given the scale of one to five, with 1 being ineffective and 5 being very effective. All policies with the score of 3 and above for each of the goals was considered effective for the group. Any policy thrust with at least three groups indicating it as effective is generally discussed as an effective policy thrust.

Table 1: Effectiveness of Nigerian APP Food Security Thrusts on Sustainable Food System Goals

Policies Thrust	Sustainable food system goals					
	Food price stability	Access to/ Availability of diversity of food for improved nutrition of households	Biodiversity/ improved environment benefits	Increase employment for the poor farmer	Improved soil health	Increase income for poor households
1) Fortification of food crops with vitamins and micro nutrient, and animal through breeding programmes	0	0	0	0	0	X
2) Creating balance diet awareness in schools and social gatherings	0	X	X	X	0	0
3) Strategic national food reserve	X	0	X	0	0	0
4) Increasing food production by the use of agrochemicals and tractors quality control and testing	X	0	0	0	0	0
5) Increase focus on Forest conservation and foods harvest	X	X	X	X	X	X
6) Encouraging organic farming	X	X	X	X	X	X
7) Supporting small farmers mixed farming/cropping system with credit and labour subsidies	0	X	X	X	X	X
8) Supporting large scale and specialised farming	x	0	0	0	0	0
9) Promoting commercial seeds to farmers	0	0	0	0	0	0
10) Allocation of 10% of Nigerian land for grazing	0	0	0	0	0	0

X – Effective

0 – Ineffective

Food Price Stability

Participants were asked about their perceptions on the effectiveness of each of the eleven food security policy thrusts of APP in achieving food price stability. It is important to note that most Nigerian households buy food from open market where farmers have free access to sell their produce. In these discussions, strategic national food reserve, proper use of agrochemicals and tractors, focus on forest food harvest and government support for large

scale and specialised farms were considered very effective policy thrust towards securing food price stability, (see Table 1). Food price was often linked to quantity of food produced, crop seasonality, crop failure, changing climate, and pest and disease. The participants were generally sensitive to seasonality of their enterprises and its impact on price. They described interventions on food price as very important poverty alleviation instrument for farming household. The food price stabilizing policies identified were said to need lots of effort from the government. This effort should be to grant farmers a minimum price, enough to cover their cost of production, and to control the price of other non-food products. The farmers know they have little influence on the price they get for their produce and so want the government to do more in this area. They suggested that government should buy the excesses during harvest and storing up for the lean period. They also suggested a community managed food storage system which they lack the capital to establish.

If there is food stored up by the government for food emergency and households are aware that this food will be made available in emergency, then traders will be less extortive. That is if our government is sincere o o o!. -Participant 1

If the excess food during the harvest time is bought from us and removed by the government and price will not fall and might not even increase during the lean period due to available of food from the reserve. - Participant 2

While national food reserve was considered good for price stability, the proper use of agrochemicals and tractors just like supporting large scale and specialised farming were frequently pointed out by participants to promote price stability. They argued that increased food production through the use of agrochemicals and tractors will reduce the risk of crop failure cause by pests and diseases. Also, having food released from the reserve during food crisis will also prevent unnecessary rise in price.

Tractors and proper agrochemical use are big man farming system. They turn food production into business. Their own is to make profit, is not about food... So, they can use the land for anything that gives money, but we need our lands to survive. - Participant 3

If this big farming system is in place it will give more power to few farmers to produce most of the food. So, if you produce most of the yam in the market, you can control the market for this food. We are not their competitors at all. - Participant 1

The discussants pointed out that forest foods will provide an alternative to farm foods. So, competition from forest food will affect the general price of food. Forest food was generally talked about as being free and a way for the poor to keep surviving. The discussants also believed that supporting organic farming will lead to price stability. The effects of organic farming were generally considered to be a more gradual, lasting and less costly process compare with the use of agrochemicals and tractors.

Organic farming is really very good, but our lands are already killed, dead and polluted... If the land is corrected and cared for using natural regeneration methods, then we can always achieve the same level of production as chemical farming ... - Participant 5

Access to and availability of diversity of food

Availability of diversity of food and households having access to diverse groups of food is very important in achieving food security. More dietary diversity leads to better food security and health outcomes (Swindale and Bilinsky, 2006). Creating balance diet awareness in schools and social gatherings, focus on forest conservation and forest foods, encouraging organic farming, and supporting small-scale farmers through credit and labour subsidies were considered very effective for access to and availability of diversity of food, biodiversity and employment.

Many people do not know the different food groups and what they do in our bodies. However, we understand the different meats- goat, chicken, cow and bushmeat, and food crops and eat them in different ways. If we are aware, it will make us plant many of these food groups knowing we are not big men who can buy anything they want. At least we can produce our own food for our health. - Participant 6

People might not see the difference in the number of different foods consumed by the big man and the small man because of the food we get from our farms and forest. Let me tell you, if not for our farms many of us will drink kunu (Maize porridge) or one kind of food that is cheap and available over days and even months. Who will give us free vegetables and fruits or the money to buy them like the rich people? - Participant 4

Organic farming system was generally agreed to be a very effective means of achieving access to and availability of diversity of foods. The discussants believed there is more diversity of crops and animal in organic farming than the farms that depends on inorganic herbicides,

pesticides, fertilizer, and heavy machines for farming. In a community where some wild plants and edible insects form part of their diet, organic farming makes it possible for farmers to get some of these edible plants and insects found in the farms.

Yes, because farmer that use these systems (Organic farming and mixed cropping) produce more varieties of food as an insurance against crop failure. It gives the farmers more money to produce more of different types of crops from a small piece of land. - Participant 3

Forest is a very important repository of food and other resources needed for food. In the case of Nigeria, most forest harvest of non-timber products are done by the poor. Harris and Mohammed (2003) identified a total of 67 wild foods from 53 species of plants in northeast Nigeria where this study took place. In line with Harris and Mohammed (2003), it was clear through the discussion that almost all households in this area make use of forest foods. This shows that forest food is very important in achieving food security in Nigeria. Other forest products like honey and shea butter contribute immensely to the food and income of the households. However, the participants argued that government conservation plans have not been effective in keeping the community forest from overexploitation. They also noted that government forest protection has only focused on environmental sustainability with little consideration for the poor who need this forest to survive.

The Gumti national park is still around us but we have no control, contribution or legal benefit from the forest. What most people do now is to sneak in and get as much as they can from it despite the cost of this action to the forest or the people around it... There is too much hunger and the safety net used by the people of old is now illegal (searching for plants, firewood and animals for food has been prohibited for certain forest by the government). People can only survive, but this is now at the destruction of the forest that use to be monitored and sacredly preserved. - Participant 7

Like organic farming, supporting small-scale farmers with credit and labour subsidies was seen by the discussants as a very effective way of promoting access to and availability of diversity of food. Providing the farmers with labour subsidy was a reoccurring theme throughout the discussion. The participants argued that most foods eaten by majority of Nigerians were produced by small-scale farmers who lack the resources to mobilize enough labour for their farms.

Oh yes, supporting small farmers who are into mixed cropping and mixed farming as against the government initiatives to support commercial farmer will boost the production of more varieties of food. This is specially for those indigenous foods that are not imported or produce by largescale farmers. - Participant 2

Biodiversity and improved environmental benefits

The importance of biodiversity in reducing hunger, food insecurity and providing income support for the poor cannot be overemphasised. Declining biodiversity will force humans to depend on fewer crops and animal for food which will undermine food security. Fewer biodiversity will simplify the ecology making plants and animals more vulnerable to pests and diseases attacks. The policy thrusts found to favour access to and availability of diversity of food were also applicable in promoting biodiversity and improved environmental benefits. In addition to organic farming, forest conservation and food harvest, creating balance diet awareness, and supporting small-scale farmers with credits and labour subsidy, having a strategic national food reserve were also considered effective in promoting biodiversity and environmental benefits.

For the policy on forest food, and national food reserve, the discussants reasoned that encouraging forest conservation and harvest of forest food will make communities and individual owner to protect their source of livelihood, and so biodiversity. Also, making food available in the market during food crisis through national food reserve was opined to be effective. These policy thrusts will deter people from getting food using means that will harm the environment and humans.

Since the forest close to our house was bought and cleared about three years ago. Oh boy, we lost the bush meat we use to get from there, firewood is now hard to get, the edible ants use to give us lots of free money, but now is gone too... - Participant 18

Bringing out stored food especially beans (cowpea) prematurely from the store when the harmful chemicals used for storage is still very active and harmful to humans and the environment has been happening. We all know this story and the death it has caused. - participant 28

The discussants highlighted biodiversity as an important foundation that underpins the structure, function and process of the food system. The discussions around organic farming,

supporting small-scale farmers who plant mixture of crops and keep different animals, national food reserve, and forest conservation and food harvest emphasised the need to protect biodiversity with focus on its impacts on socioeconomic and biological factors.

Employment and Income support for poor households

Most poor people depend on food and income from their labour for survival. Decent labour for the poor for food security has not been properly addressed in policies of many countries (FAO, 2012). Decent labour-intensive food system will help developing countries like Nigeria to solve three of their pressing problems, high unemployment, poverty and food insecurity. Even with the contribution of the farmers to Nigerian food economy, most of the poor and food insecure Nigerians are farmers (National Bureau of Statistics Nigeria, 2005). If food security will be achieved in Nigeria, decent and productive employment for the poor should be taken seriously.

Encouraging organic farming and providing credit and labour subsidy support for the smallholder farmers were agreed to be very effective in securing employment for the poor. This is because most of the production done in these systems use manual labour. The smallholder farmers usually practice mixed cropping and mixed farming systems which lends itself to the use of manual labour. In the discussion, it was clear that creating balance diet awareness and increase focus on forest conservation and forest foods will be effective in creating more employment for the poor households. The participants frequently talked about the importance of having regular labour for farm labourer and more money to hire the labour and pay them well. This, they believed will help the poor among them to train their children in schools so their children can have a better chance at working in other sectors of the economy. The participants argued that the poor will remain poor if there is no support for the small-scale farmers who cannot afford good skill training or formal education for their children. There were lots of concerned on the lack of support for the small-scale farmers for credit from financial institutions and the government. The discussants suggested that farmers will fare better if the government supports them with labour subsidies instead of subsidizing the cost of fertilizers which they hardly have access to, and tractor which is depriving the farm labourer their jobs.

If every farmer in our state can afford and depend on manual labour for clearing, tilling, planting, weeding to harvesting without the use of tractors or chemicals, much labour will be required which is available also. - Participant 9

When discussing the promotion of largescale farming which involved the cultivation of over two hectares of land, and commercial seed promotion the discussants sound very distant from the concept. Using the pronouns “they” and not “we or I”. Largescale farming system has been largely supported by the government through input subsidies, credits, training and export supports as a food security and sustainable development measures. Largescale and specialised farming are promoted as efficient system that brings about more food, more employment and better environment. However, listening to the discussions in the groups in this food insecure Zone (Northeast, Nigeria), it was clear that promoting largescale and specialised farming may not improve the lot of the poor farmers. Some of them were also willing to work as labourers in the big farms but they are afraid of not being able to secure the jobs.

I am just thinking about the big rice farm they are taking our lands to do now. How many people will be employed in it and how many people will go hungry because they lost their land and could not even get employed as labourer in the farm that use to belong to them? Rice might be cheap through this system but how do you buy it if you have lost your source of income and food. - Participant 17

When it comes to providing income support for the poor households, the participants agreed that food crop fortification is effective in providing income support for households as it is with forest food harvest, and support of credit and labour subsidies for small farmers. Fortification gives the farmers a new variety to produce which leads to an increase in the demand of the crops. They generally agreed that money realised from the sale of forest product has most time been a means of sustenance for the poor households.

It was obvious from the discussion that labour consists the largest spending of the small-scale farmers and subsidizing it will impact positively on their output and income. So, encouraging organic farming and supporting smallholder farmers with labour subsidy will reduce the cost of production for the farmers and increase profit and self-reliance for the farmers. Poor

farmers will benefit when they spend very little on farm input and are able to use their labour and access extra labour when they need it.

.... Many depends solely on the income from harvesting forest product like wild fish, vegetables, fruits, seeds and animals for their livelihood. Without the forest, so many wouldn't be able to survive. - Participant 10

Yes, organic farming will make poor farmers who already lack money for the ever-improving seed and chemicals spend less money. They would not spend their money on chemicals and can use up their unemployed labour to make money. However, if these things, I mean fertilizers, herbicides and all those improved things are free, then I would not mind using them. - Participant 11

Soil health improvement

A healthy soil will produce healthy foods, enhance biodiversity and ecosystem services for a healthy society. FAO (2015) clearly noted that most soils used for food production are already degraded. Policies on food security should therefore focus on achieving food security in a good agroecosystem health while combating soil degradation. The discussants suggested the use of organic fertilizers like animal dungs and crop waste, cover crops, and the use of less invasive agriculture to reduce the disruption of the soil organism activities to improve soil health. The discussions frequently highlighted the importance of organic manure in sustaining the microorganisms and their activities, and beneficial weeds and insects in the farm. Leaving the farmland fallow and regulating forests timber and non-timber harvest were considered by the discussants as a means of improving the soil quality. Healthy soils will also provide more benefits to poor households who depend on these lands for survival.

Organic farming gives the living organisms in the soil the time to follow a natural process of rebuilding itself. It is protective of the earthworms, crickets and other insects that lives under the soils surface. When you touch a good soil, you will feel the spaces for air, and it breathes. A soil with high organic manure is always dark and doesn't stick together like gum. You can even smell the life in it. Soils that are not polluted with chemicals do not grow bad weeds even. what else does a farmer need to produce food. - Participant 12

It is obvious why we still use the chemicals even when we know they are bad. It is cheaper than labour and faster in giving results... . As we are reducing the labour needed in the farm,

we have succeeded in reducing the honey in the forest, ... even made our soil dependent on agrochemicals to produce food, and this is not going to last. It cost more. Now without the chemicals some of the lands will give you nothing, so you spend and spend. Each subsequent year is worse. - Participant 31

Ball, Hargreaves, and Watson (2018) in agreement with opinion of the discussants noted that the agroecological farming systems can produce as much food as the conventional system in addition to promoting environmental sustainability and healthy society. The argument has been between producing more food for the ever-growing population using the conventional farming system and producing food in organic farming system which supports environmental sustainability. There is also the problem of supporting largescale farming system as against the small-scale farming that is prevalent in developing countries. However, Ball et al. (2018) argued that agroecological farming systems which takes care of the soil are two to four time more energy efficient than the conventional system.

Two food security thrusts were not considered effective by the participants for any of the sustainable development goals discussed. The discussant generally mentioned that this policy thrusts- promoting commercial seed and allocation of 10% of Nigerian land for cattle grazing will contribute very little or nothing to the livelihood of the poor farmers.

Conclusion and Recommendation

The outcome of this discussion as summarized in Table 1 is important for shaping the Nigerian food system. Though the APP thrusts are geared towards achieving sustainable development, Nigerian policy authorities should focus more on encouraging organic farming, credit and labour subsidies to support the smallholder farmers, creating balance diet awareness, and forest conservation and food harvest to achieve food security, environmental sustainability and employment.

It is clear from the discussion that most of the farmers survive on their labour and food from their farms. They are poor but are still able to eat from their farms. Having access to land and been able to depend on their indigenous knowledge, previously stored seeds, forest, and labour for food and wellbeing is paramount to their survival. The shift to commercialization of farms and commoditization of food may not favour majority of Nigerian farmers. These farmers are mostly not educated and may not be able to take advantage of the new

opportunities presented in commercial farming. These farmers have very small farm sizes and are poor that they may not be able to buy more land and may not be able to get support from the financial institution. The probability of losing their small lands which they depend on in the face of this policy push for large farm sizes to accommodate commercialized farms is high. Hence, food insecurity in this area might be worsened by lack of entitlement resulting from farmers losing their lands, not being able to compete with rich farmers, unemployment and deforestation that will come with the largescale farming.

The concern raised by the participants on the conservation of the forest should be considered diligently. There is need to balance forest conservation for the good of biodiversity and livelihood of those who depend on the forest. Community-based forest management might be a good way to bring about the balance needed. Food diversity, biodiversity, soil health, increased employment and income support for the households will benefit from the provision of credit and labour subsidies, organic farming, forest conservation and food harvest.

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