REVITALIZING SUSTAINABLE AGRICULTURE IN NIGERIA: THE PARTICIPATORY RURAL APPRAISAL (PRA) APPROACH REVISITED

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Abstract
Agricultural productivity in Nigeria and its overall contribution to the nation’s Gross Domestic Product (GDP) has continued to decline or stagnate with the discovery of oil as a major revenue earner for the nation. In other to stem this situation, successive regimes initiated and implemented various policies and programmes but they all failed to re-vitalize the agricultural sector. This paper is of the contention that promoting sustainable agriculture is crucial to Nigeria’s economic development. To achieve this, the paper posits that a viable, realistic and sustainable approach to re-vitalizing the agricultural sector must use the rural farmers and people as its building blocks. The paper therefore, recommend the Participatory Rural Approach (PRA) approach in which the farmers take an active and influential part in shaping decisions that will ultimately affect their lives by been involved in government policy formulation, adoption, implementation, monitoring and evaluation.

Key Words: Sustainability, Agriculture, Participatory Rural Appraisal Approach, Environment, Development.

Introduction
Prior to the 1970s when oil began to emerge as the leading sector and money spinner in the Nigerian economy, the country depended largely on agriculture for its survival. The agricultural sector provided food for the ever growing population, raw materials for industries and employment for over 75 percent of the labour force. The bulk of the food demanded in the country then was satisfied from domestic production. Also, agriculture export products constituted the main source of foreign exchange earnings, which aided the importation of capital goods into the country (Ego, 2008; Titilola, 2008; Nchuchuwe and Adejuwon, 2012; Ugwu and Kanu, 2012; Oni, 2013).

According to Ekpo (1991), the agricultural sector before independence accounted for over 60.0 percent of the Gross Domestic Product (GDP) of the country. Around 1966, the relative share of agriculture to GDP was 53.0 percent while that of the services sector was 29.0 percent. But because of the neglect of the agricultural sector during the oil boom era of the 1970s, the relative shares of agriculture to GDP decreased to 27.0 percent in 1983 while that of the services sector increased to 43.0 percent.

However, during the periods between 1988 and 1993, the relative contribution of agriculture to GDP rose again to between 37.9 and 41.5 percent. In the same way, estimated output of the major agricultural products in Nigeria has shown significant improvement over the years. For example, output of (a) staple food crops rose progressively from 52,770.00 tones in 1989 to 71,852,000 tones in 1993, (b) other food crops from 10,754,000 tones in 1985 to 12,508,000 tones in 1993; livestock products rose from 1,266,000 tones in 1989 to 1,312 tones in 1993; and forest products rose from 101,213,000 cubic metres in 1989 to 112,070,000 cubic metres in 1993. The only agricultural sub sector that showed a declining trend during this period was the fishery sub sector in which output declined from 363,000 tones in 1989 to 177,000 tones in 1993 (CBN, 1994). Despite the above increases, the overall contribution of agriculture to the country’s GDP has failed to surpass or even equal that of the 1960s when agriculture alone contributed to over 60 percent of the GDP. This is even against the background of many policies and programmes initiated and implemented by successive regimes in the country to reverse or stem this trend.

The argument of this paper is that popular participation is a pre-requisite or bedrock upon which sustainable agriculture can be established in the country. The paper examines past and current agricultural
practices, policies and programmes and went ahead to advocate ways for the transition of the nations agricultural economy to a sustainable agricultural system.

Conceptual and Theoretical Framework

There is no universally accepted definition of sustainable agriculture or of sustainability in general. According to Iniodu (1997), sustainable agriculture is primarily concerned with measures designed to protect the environment, natural resources and the entire ecosystem from degradation while, at the same time, ensuring high and stable crop yields. It aims at resource improvement and at preventing long-term reduction in the productivities of resources because according to him, it makes no sense to meet the needs of people today if this leaves no tomorrow for their children. Pretty (1995), sees sustainability as a complex and contested concept which, to some implies persistence and the capacity of something to continue for a long time. To others, it implies resilience and the ability to bounce back after unexpected difficulties. In terms of the environment, sustainability involves conservation and maintenance of natural resources, not damaging and not degrading them. Others still regard sustainability as involving development activities directed towards protecting the environment (Titilola, 2008).

It is an obvious fact that agricultural practices anywhere in the world degrade and pollute the environment and threaten its capacity for future agricultural production. It thus becomes the responsibility of all citizens, including policy-makers to devise measures for managing the environment to attain the widest range of beneficial uses without degrading it, without risk to health and safety and without loss of future productivity. The goal here is to maximize the productivity of the environment and to ensure it’s continued used into the very long future. This is the case of sustainable agriculture (Iniodu, 1997).

Environmental degradation due to agricultural activities is not limited to Nigeria. According to Scherr and Yadav (1995), 65.0 percent of the croplands in Africa, 51.0 percent in Latin America and 38.0 percent in Asia have become degraded since the middle of the twentieth century. According to their findings, as land deteriorates, yields decline, forcing farmers to expand into marginal lands which quickly becomes depleted in turn. They made policy recommendations for protecting and improving agricultural lands which include:

i. Improving information systems for land management.
ii. Increasing research and technology development and promoting investment in land development.
iii. Modifying property rights to encourage long-term land investment and development.
iv. Developing flexible and participatory planning systems for sustainable land use.
v. Supporting local people and organizations to manage local resources and reducing discrimination against marginal regions in public investments.
vi. Developing marketing infrastructure and correcting distorting price incentives, and
vii. Encouraging rural income growth and diversification.

Pretty (1995:9), has argued that a sustainable agriculture is seen as any system of food and fibre production that systematically pursues the following goals;

i. A more thorough incorporation of natural processes such as nutrient cycling, nitrogen fixation and pest-predator relationships into agricultural production processes.
ii. A reduction in the use of those off farm, external and non-renewable resources with the greatest potential to damage the environment or harm the health of farmers and consumers and more targeted use of the remaining inputs used with a view to minimizing variable costs.
iii. A more equitable access to productive resources and opportunities, and progress towards more socially-just forms of agriculture.
iv. A greater productive use of local knowledge and practices, including innovative approaches not yet fully understood by scientists or widely adopted by farmers.
v. A greater productive use of biological and genetic potential of plants and animals species.
vi. An increase in self-reliance among farmers and an improvement in the match between cropping patters and productive potentials and environmental constraints of climate and landscape to ensure long-term sustainability of current production levels, and
vii. Profitable and efficient production with an emphasis on integrated farm management, and the conservation of soil, water, energy and biological resources.

For our purpose here, and bearing everything we have discussed above in mind, we define sustainable agriculture as an integrated system that seeks to establish a cordial pattern of relationship between the environment, agriculture and economic development with the sole aim of guaranteeing food self-sufficiency and self-reliance to present and future generations.
The Institute of Development Studies (IDS) defines Participatory Rural Appraisal (PRA) as “a family of approaches, methods and behaviours that enable people to express and analyze the realities of their lives and conditions, to plan themselves what action to take and to monitor and evaluate the results” (IDS, 1996). It provides a way by which poor people are given a voice, enabling them to identify and analyze their problems and determine their priorities. In agriculture, the participatory rural appraisal approach can generate important insight, which may be better fitted to serving the needs of poor farmers. It may also influence their perceptions and lead to change of attitudes and agendas.

The participatory rural appraisal approach variously referred to as “participatory rapid appraisal” or “popular participation” or “bottom-up” approach is defined by the Overseas Development Administration (ODA) as a process by which people take an active and influential part in shaping decisions that affect their lives. It is an intensive and semi-structured learning experience carried out in a community by a multi-disciplinary team, which includes community members. In its simplest form, the PRA is a process, which carries the people along throughout the development cycle. By it, all those who have an interest play an active role in decision-making and in all activities that affect them. The PRA approach as promoting greater efficiency, effectiveness and sustainability. Agricultural projects under small farmer participation according to the ODA are:

i. More efficient because, by involving all small farmers’, wider knowledge pool that supports acceptable design and implementation is made available.

ii. More effective because the farmers interest can be easily identified and addressed in the design and since the farmers are personally involved, the chances of achieving the intended outcome are enhanced; and

iii. More sustainable because farmers are encouraged and are free to apply their knowledge and take initiatives; farmers also gain skills and confidence to maintain the benefits of the project (ODA, 1995: 94-95).

According to Iniodu (1997), the PRA approach requires working with and not for the farmers; helping the farmers to become self-reliant, not dependent on others; and cooperating with the farmers or the central actors in the agricultural drama and not the stage-hands or spectators. Nigerian’s long involvement in agricultural development programmes and the inability of the programmes to significantly improve agricultural performance suggest some defects in the design and/or implementation of the programmes. In particular, they failed programmes were designed at the federal, state or local government levels and passed down to farmers for implementation. The PRA approach, which carries the farmers along, appears to be ideal for Nigeria. It is consistent with Seaman Knapp’s dictum which says:

What a man hears, he may doubt;
What he sees, he may also doubt;
But what he does, he cannot doubt;
(Cited in Iniodu, 1997:51)

What we have been trying to do so far in this framework is to bring to the fore that the PRA approach which does everything to empower small farmers remains the ideal for Nigeria vis-à-vis revitalizing sustainable agriculture in the country. We would further argue that the basic advantage of the PRA approach to sustainable agriculture for economic development in Nigeria is that the rural farmers share in initiating farm project and policies that will ultimately change their lives and that of the nation. Farmers are actively involved in decision-making on matters that affects their lives and that of the nation. As Oram and Hojijati (1995:173), have rightly observed, since the “strategies for new technologies are often imposed from “top-down”, implementation fails when local people are not consulted or when they are treated only as labourers.” Experience in Nigeria and even elsewhere show that the “top-down” approach to agricultural development hardly ever serve the immediate and felt-needs of the rural farmers and by extension that of the nation.

The theoretical framework of this paper is predicated on the Mass Line strategy or model. The Mass Line strategy or model was drawn by Okereke (2004) from Oculi (1979) and Pearson (1980). According to Okereke (2004:72), the Mass Line strategy is a development path that is not discriminatory against the poor majority and is based on two essential assumptions. The first is “access by agricultural families to land on the basis of relative equality assured by a rational division of agricultural lands among work teams” and, second, is facilitation of the growth of the productive potential of farms on the basis of shared capitalization rather than by monopolistic cumulative appropriation.

The Peasant-based policy strategy of Mass Line model is one in which the government looks upon the peasantry for a large part of its political and economic support and must be able to mobilize that support both in achieving power and maintaining it. It involves an alliance between the state and the
peasantry in the formulation and execution of agricultural policy. The outcomes of such alliance “is an agricultural policy that not only fulfills certain national requirements but also ensures the palpable improvement of the livelihood of the working cultivator, so that livelihood becomes the prime measure of success of the policy” (Pearson, 1980:245). The relationship between the government and the peasantry becomes those of symmetrical partnership.

The Mass Line strategy takes the farmers into confidence and believes in their capacity to work together with the government not only to transform production methods and increase production, but also to transform the rural economy. Swift (1979:43), has rightly observed that:

It is simply that rural people know useful things others do not, that they are more likely successfully to work a new technology or rural development strategy they themselves have had a hand in devising, and that they have a good moral claim to participate in deciding their own future on the basis of their own experience.

An organizational structure for reaching the framers must be devised to ensure their adequate participation. Such structure must be build upon the existing social organizations in the peasant economy around which they have, over the years, organized their political, economic and social affairs. These include the age grades, the clan, village and community assemblies (Okereke, 2004). Williams (1981:11), after one of this studies of Ibadan Cocoa farmers came to the conclusion that rural social structures could be a useful instrument for transforming agriculture in the country. He writes that:

In 1971, I interviewed a number of cocoa farmers in Ibadan Division. They changed my view of the rural social structure, and also led me to ask why agricultural development policies continued to waste vast sums of money and to harm, rather than assist farmers and agricultural production.

From the foregoing, it is evident that our adopted theoretical framework of Mass Line model can help in guiding the Nigerian state towards achieving self-sufficiency in agricultural production.

**Nigeria’s Agricultural Practices, Policies and Programmes**

Majority of Nigerians are engaged in subsistence agriculture, which is characterized by traditional practices. A conservation estimate has it that about 75 percent of the country’s population are peasant farmers who carry out their activities with simple farm implements. Over the years, Nigeria has depended on traditional agriculture for her subsistence. The major inputs of traditional agriculture are land and labour with capital consisting merely of rudimentary tools and implements. The level of agricultural output under the traditional system is often determined by the availability and productivities of the inputs (Ego, 2008; Titilola, 2008; Nchuchuwe and Adejuwon, 2012; Ugwu and Kanu, 2012; Oni, 2013).

Iniodu (1997), writes that traditional soil management in Nigeria’s agriculture is based on the bush fallow system whereby each plot of land is left in fallow for a number of years after cultivation before it is brought back under crops. In its original form, the bush fallow system was the practice of soil management in which farmers depended on natural forces for the restoration of soil fertility after soil nutrients had been exhausted through cropping. It consisted of leaving the land “to rest” for ten to twenty years before it was brought back under crops. During the period of rest, the land naturally regained its fertility through leaf and twig falls and accumulation of plant and animal remains. But nowadays, because of population pressure on land in many parts of the country, the fallow duration has been significantly reduced in most parts to four years or less and soil fertility and productivity have correspondingly declined.

Since the level of living of the farmer and his family is closely dependent on the productivity of the farmer and his land, any decline in agricultural yield means a decline in the level of living of the farmer and his family. However, in order to improve the level of the growing number of Nigerians who depend on agriculture for their subsistence, new approaches to agricultural production have to be sought to raise the productivities of the farmer and his land. This gave rise to the modern production techniques that could enhance farm yields been introduced into the productivity system.

Modern technology is today married to traditional practices to raise farm productivity. The types of modern technology introduced into Nigeria’s traditional agricultural practices are biological, chemical and mechanical in nature. Biological technology involves new plant varieties that have high yields per unit of land and labour. Chemical technology is concerned with the use of things like inorganic fertilizers to improve soil nutrients, effective pest control measures involving the use of pesticides, the use of herbicides and other appropriate preservation measures. Mechanical technology entails the use of agricultural machinery such as combine harvesters, ploughs, sprayers and tractors. The need to marry modern
technological practices with traditional system in Nigeria came as a result of the realization that during the oil boom days of the 1970s, neglect of agriculture by Nigerians resulted in the physical decline of agricultural production. For instance, between 1970 and 1980, output of the major food crops and cash crops declined significantly in real terms (see Tables 1 and 2).

The Nigerian government was aware of this decline in the production of food and cash crops in the country and therefore, embarked on policies and programmes that would reverse this trend. First, the government yearly allocation to agriculture increased tremendously over the years as shown in Table 3. But despite all the huge investment in agriculture, the performance of the sector has continued to deteriorate. Also the government encouraged the introduction of improved technology into the agricultural sector in an effort to raise agricultural productivity. This gave rise to the introduction into the system in 1970s and early 1980s of some agricultural programmes to revamp the sector and restore it to its prime position as the mainstay of the nations’ economy, catering for the bulk of the nations’ employment opportunities and providing raw materials both for domestic industries and for export. Some of the programmes introduced were the National Accelerated Food Production Programme (NAFPP), the Operation Feed the Nation (OFN), the Green Revolution (GR), the Operation Grow More Food (OGMF), and the Land Use Decree. Other programmes include the National Rice Production Scheme, the River Basin Development Authorities (RBDAS), the Agricultural Development Projects (ADPs), the Cattle Breeding Programme, the Directorate for Food, Road and Rural Infrastructure (DFRRI), National Agriculture Land Development Authorities (NALDA), and National Directorate of Employment (NDE).

Also in 1988, the Federal Ministry of Agriculture, Water Resources and Rural Development produced a 65-pages document entitle: “Agricultural Policy for Nigeria.” This document largely restates the major agricultural policy objectives, which over the years had appeared in a number of federal government publications such as the second (1970-1974), third (1975-1980) and fourth (1981-1985) national development plans and in the SAP package as it relates to the agricultural sector. The overall policy objective of the 1988 document is to achieve self-sustaining growth in all the agricultural sub sectors, and the realization of structural transformation for overall socio-economic development of the rural areas. As have been the case in previous documents on agricultural development in Nigeria, the primary focus of the 1988 agricultural policy are on improvement in the production of basic food commodities, raw materials particularly for use in industries, diversification of export base and stimulation of job opportunities for the increasing number of the unemployed. However, there are some fairly new directions and emphasis in the 1988 document. These new areas are related to environmental protection, more and specific involvement of local government and the private sector in solving the problems of agricultural policies in the society. Other new emphasis are on the need for efficient and effective monitoring and evaluation of agricultural activities and the establishment or reinforcement of support services such as agricultural insurance, data bank and advisory programme (Ogbaru, 1995).

Despite all the above policies and programmes initiated by various governments to revamp agricultural productivity in the country, the performance of the sector has continued to noseive. One of the problems of agricultural policies in Nigeria has been that of instability. Past agricultural policies, programmes and strategies in the country have been characterized by frequent changes, such that no consistent policy outlived different regimes. Virtually all the programmes enumerated above were scrapped soon after the government that initiated it was changed. Lack of continuity in policy has made it difficult to assess the effectiveness of any specific programme. Yet, stability of policy, which ensures that the objectives, strategies and the attendant programme, which derive from them, are implemented over a reasonable length of time, is a precondition for successful investment in sustainable agriculture.

However, the opinion of this paper is that the major shortcoming inherent in all Nigeria’s agricultural policies and programmes has to do with the fact that such policies and programmes were “handed down from above” with minimal or no inputs from the masses of small farmers whom the policies were designed to serve. For agriculture to be sustainable, it needs the involvement of the local farmers at each level of the development process including plan design, policy formulation, project implementation, monitoring and evaluation. This means that centralized planning must give way to a decentralized system and this call for the Participatory Rural Appraisal (PRA) approach.

The Participatory Rural Appraisal (PRA) Approach to Sustainable Agriculture

We have argued earlier that the aim of sustainable agriculture is to bequeath an agriculturally productive environment, which will guarantee food self-sufficiency and self-reliance to present and future
generations. Iniodu (1997:52), has enumerated some fundamental and key elements which combination constitutes the basis for sustainable agriculture. They are agro-climatic variations, agro-environmental management strategies, government policies, production technologies, availability of agricultural inputs and agricultural rural infrastructure.

The adoption of agricultural programmes, policy measure and strategies that are environmentally friendly is basic to the sustainability of agriculture. Intensification of agricultural production can lead to mismanagement of agricultural resources especially land with serious environmental consequences. Abdulai and Hazell (1995:6), believe that mismanagement of such modern inputs like fertilizer, pesticides and irrigation water often results in “water logging and Stalinization of irrigated land, chemical contamination of water, pesticide poisoning, and destruction of beneficial species.” They advised that policy makers should be aware of the dangers associated with agricultural intensification and to avoid policies that bring about mismanagement of inputs.

Intensive farming alone is not the only source of environmental problem facing agriculture in the country. The extensive farming system, which is widely adopted in the country, is highly associated with resource mismanagement. Population pressure on land as was observed earlier, has led to drastic reduction in the fallow duration, which had been the traditional soil management technique throughout Nigeria and has caused serious soil degradation. And with the continuously declining productivity of the land resources, farmers have expanded their production activities into marginal and highly fragile areas that are vulnerable to degradation. Besides, agriculture in Nigeria is predominantly rain fed. Abdulai and Hazell (1995:6) have outlined environmental problems associated with rain fed farming to include:

1. Conversion of primary forests to agriculture will lead to loss of biodiversity, climate change and exposure of fragile soils.
2. Expansion into steep hill sides resulting in soil erosion and lowland flooding;
3. Degradation of watershed protection areas.
4. Shortened fallows with loss of soil nutrients and organic matter resulting in declining yields.
5. Increased pressures on common property resources such as woodlands and grazing areas with breakdown of indigenous institutions that regulate and manage these resources, leading to open access regimes and resources degradation; and
6. Declining resilience in ecosystems with reduced ability to rebound from stress such as droughts.

It is obvious that the Nigerian farming system shares the above problems. Today, there are hardly any virgin forests in the country. In the South-eastern states, for example, almost primary forests have been converted into farmlands without any measures to prevent erosion. These and other problems have contributed to environmental degradation.

The implication of all the above is that the production technologies for sustainable agriculture must be environmentally friendly. It also means that policy makers must examine and select those traditional practices with minimum environmental cost and combine them with modern technologies that do not seriously degrade the environment. Selective use of modern practices is important for sustainable agriculture in Nigeria. As Iniodu and Ukpak (1996), has emphasized, intensive cultivation needs more fertilizers, irrigation for double or triple cropping, increased use of pesticides along with pollution control measure, more agricultural and management education and increased erosion control devices. They contend that to maintain increases in yield, nutrients must be applied after repeated cultivation. They call for careful studies of nutrient-supplying capacity of soils, fertilizer needs, fertilizer efficiencies and better crop and soil management, which are essential for sustainable agriculture. Consequently, the use of mechanical technology involving the use of heavy agricultural machineries that deplete the soil should, as much as possible be avoided. Rather, chemical and biological technologies should be encouraged and combined with such traditional practices that are capable of protecting the environment for long-term agricultural production.

On its part, agricultural services in the country have left much to be desired. The government has always assumed the responsibility of supplying such inputs like fertilizers and pesticides but experience have shown that fertilizers, whenever they are available, are sold not to the real farmers but to some unscrupulous businessmen who later sell them at exorbitant prices to the few farmers who are lucky to reach them. Ogbugu (1995), writes that another serious dimension to this problem is that of politicization of the distribution of fertilizers that managed to reach their destinations and other farm inputs that pass through the state governments. On this score, some local government functionaries have often accused some of the state governments of politically induced discriminatory allocation of such items, or of using the distribution and sale of fertilizers as a means of political patronage for favoured political supporters.
and lackeys. In the same manner, selected supporters and favoured public officers are often used in some of the state’s fertilizers procurement and distribution committees in order to ensure that the biddings of the political “masters” are carried out without question. So, corruption, fraud, and other forms of malpractices have continued to characterize agricultural services in the country.

Also, agricultural credit that is believed to be the main source of agricultural capital is hardly accessible to rural farmers. Apart from inaccessibility, small farmers find it difficult to meet the collateral security requirements set by banks to qualify for loan. Farmers are therefore eluded by this service. We therefore, advocate for the expansion of the rural banking scheme and the setting up of more agricultural credit institutions to make banking facilities accessible to the rural farmers. Furthermore, transport and communication infrastructure should be expanded in the rural areas to facilitate exchange of agricultural ideas and transportation of agricultural inputs and products. Access roads to rural areas are essential for cheap and easy conveyance of farm products to local and distant markets. In the same way, government policy should provide for easy mobility of the extension officials who must disseminate research and agricultural information to rural farmers. Provision of transportation facilities to this class of workers always has an expansionary impact on agricultural output.

Above all these, the foundation of sustainable agriculture in Nigeria must be laid at the level of the agricultural people. Government policies, programmes, strategies or any form of reorganization should be oriented towards the problems, needs, capabilities, traditional practices, aspirations and local organization of the farming people themselves. From such a base, the organization would be extended to the state and national level. This will of course, as Nwachukwu (2004:92), has noted, be a reversal of the usual “top-down rather than bottom-up approaches”, that is organizing at the top level first and assuming that the lower levels will be effectively involved as the process continues. This is one fault with Nigeria’s agricultural policies and programmes. Organization from the top hardly ever works out. The gap between the elite leadership of government officials, scientists and technicians at the top, and the agricultural community at the bottom, is too great and wide. One cannot but agree with the views expressed by Tannous (1969:61), in his study of agricultural problems of the developing countries that “a national plan for agriculture conceived in the sophisticated terms of the upper circles is likely to be divorced from the realities of life as the agricultural people live it.”

Nigeria’s experience with past agricultural policies and programmes such as Operation Feed the Nation (OFN), River Basin Development Authorities (RBDAs), Agricultural Development Projects (ADPs), Green Revolution (GR), etc, and other recent government agricultural promotional policies and programmes can be described as “exclusionary” of the small farmers who should have been the focus of realistic agricultural promotional policies and programmes (Ogbuagu, 1995:105). As Ali (1990:35), rightly observes, “the small farmer has always been the most unfortunate actor in most of the third world. He is either exploited or marginalized or completely forgotten in the process of economic and social change and it’s planning. In most development plans, attention is often limited to the infrastructure - roads, dams, bridges, etc, or to farm inputs such as fertilizers, pesticides and high yielding crops. Thus, in the process of “thinking big,” anything small was bound to be forgotten.”

According to Ogbuagu (1995), the little improvement that has occurred in Nigeria’s agricultural sector has been more as a result of increased public expenditure than to real growth or commitment of the population to agricultural development. In effect, government efforts to reach the small farmers have largely been unsuccessful. The result has been the inability of government and aid agencies to reach the small farmers. For this inability to reach them and thus make meaningful and significant changes in their condition of life, Ali (1990), posits that resources have been largely wasted in an environment, which the governments and aid donor hardly could comprehend.

Thus, given the Nigeria experience, Acharya’s advice can hardly be contested. He stresses that:

The long term objectives of growth, poverty alleviation and structural transformation are likely to be best served by concentrating resources and policies in favour of small holder agriculture. Smallholder agriculture offers the best opportunities for transforming abundant resources of land and labour into output, while economizing on scarce factors of capital and foreign exchange. This is true both for the present endowment of resources and for likely future technical innovations (Acharya, 1981:131).

The obvious implication of the above suggestions is that the establishment of one federal, state of local government agency after another; the building of gigantic dams; the importation of tractors, equipment and other farm inputs is not and can never in themselves be the answer to re-vitalizing sustainable agriculture.
in Nigeria. The solution to a realistic, viable and sustainable approach to the problem lies in using the rural farmers and peoples as the building blocks of government agricultural policies and programmes. This is the essence of the Participatory Rural Appraisal (PRA) approach, which according to Iniodu (1997:50), has some specific advantages:

i. It is democratic because it involves the small farmers in the decision and responsibilities of the agricultural process.

ii. It complements government investment efforts.

iii. It is relatively cheap and flexible, and

iv. It is a way of encouraging local ideas and initiatives, and of mobilizing energies, skills and resources.

Concluding Remarks

It is obvious that revitalizing sustainable agriculture is crucial to Nigeria’s economic development. Since farming in Nigeria is predominantly the responsibility of the rural small farmers, any policy or programmes aimed at raising agricultural output that do not involve them is bound to fail hence the need for the Participatory Rural Appraisal (PRA) approach to ensure sustainable agriculture in the country. By this approach, the rural farmers are actively involved in the setting of targets and in the planning, implementation, monitoring and evaluation of strategies and programmes of agricultural development to ensure that programmes reflect their (farmers) priorities. It also entails encouraging and assisting the small farmers to organize so that their representatives can participate in economic and social policy making and work effectively with government, non-governmental and other institutions to obtain the services and opportunities needed for the improvement of farmer’s welfare. Participation is an important aspect of agricultural development that should not be neglected.

However, agricultural practices, whether traditional or modern that tend to degrade or destroy the natural ecosystem must be avoided so that we do not end up endangering the prospects of environmental sustainability which would enable the nation cater for its needs and such other agricultural needs of its people both now and in the future. We must ensure that we leave an environment, which will be as productive, or more productive in the future as it is now. This calls for the need to encourage agricultural research to discover designs and measures to promote environmental sustainability.

Finally, for sustainable agriculture to be meaningful in Nigeria, the various existing agricultural programmes must be intensified and all constraints to agricultural sustainability so far identified removed. This must be done conscious of the fact that the greatest need of human beings is food hence everything humanly possible should be done to feed the populace (both now and in the future) if Nigeria must be truly independent.

Table 1: Output of Major Food Crops in Nigeria, 1970 – 1990 (’000 Tonnes)

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<tr>
<td>Maize</td>
<td>1,443</td>
<td>1,332</td>
<td>612</td>
<td>1,190</td>
<td>2,205</td>
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<td>Sorghum</td>
<td>4,053</td>
<td>2,920</td>
<td>2,346</td>
<td>4,991</td>
<td>4,019</td>
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<tr>
<td>Rice</td>
<td>280</td>
<td>504</td>
<td>105</td>
<td>196</td>
<td>461</td>
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<tr>
<td>Wheat</td>
<td>191</td>
<td>824</td>
<td>na</td>
<td>303</td>
<td>Na</td>
</tr>
<tr>
<td>Beans</td>
<td>884</td>
<td>858</td>
<td>510</td>
<td>611</td>
<td>1,354</td>
</tr>
<tr>
<td>Cassava</td>
<td>5,224</td>
<td>2,324</td>
<td>942</td>
<td>1,378</td>
<td>3,675</td>
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<tr>
<td>Yam</td>
<td>12,303</td>
<td>8,620</td>
<td>5,248</td>
<td>4,738</td>
<td>7,813</td>
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<tr>
<td>Coco yam</td>
<td>1,381</td>
<td>504</td>
<td>208</td>
<td>na</td>
<td>631</td>
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<tr>
<td>Plantain</td>
<td>985</td>
<td>1,016</td>
<td>1,042</td>
<td>1,113</td>
<td>1,972</td>
</tr>
<tr>
<td>Vegetables</td>
<td>1,091</td>
<td>1,303</td>
<td>972</td>
<td>na</td>
<td>1,761</td>
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na = not available


Table 2: Production of Major Cash Crops in Nigeria, 1970-1990 (’000 Tonnes)

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<tr>
<th>Year</th>
<th>Cocoa</th>
<th>Cotton</th>
<th>Groundnut</th>
<th>Palm oil</th>
<th>Palm kernel</th>
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<td>1970</td>
<td>305</td>
<td>358</td>
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### Table 3: Federal Government Capital Expenditure on Agriculture as a Percentage of Total Federal Budget (1970 – 1998)

<table>
<thead>
<tr>
<th>Year</th>
<th>Agricultural Capital Expenditure (N Million)</th>
<th>Total Federal Capital Expenditure (N Million)</th>
<th>(1) as percentage of (2)</th>
</tr>
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<tbody>
<tr>
<td>1970</td>
<td>5.6</td>
<td>220.9</td>
<td>2.5</td>
</tr>
<tr>
<td>1971</td>
<td>8.4</td>
<td>173.8</td>
<td>4.8</td>
</tr>
<tr>
<td>1972</td>
<td>20.7</td>
<td>451.3</td>
<td>4.6</td>
</tr>
<tr>
<td>1973</td>
<td>35.4</td>
<td>565.7</td>
<td>6.3</td>
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<td>1974</td>
<td>87.4</td>
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<td>5.6</td>
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<td>211.2</td>
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<td>1976</td>
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<tr>
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<tr>
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<td>4.9</td>
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<td>659.9</td>
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**References**


