

Review

Developing an approach for a sustainable agricultural revolution: A prescription for the private and public sectors in the Southern states of Nigeria

E. A. Alademerin* and T. O. Adedeji

Department of Agricultural Production and Management Science, Tai Solarin University of Education, Ijebu-Ode, Ogun State, Nigeria.

Accepted 22 April, 2010

Over the years, agricultural development in Nigeria has been on a downward trend. This negative trend is attributed to the apathy from the people, the discovery of oil just before independence; and the after effects of the civil war of the late 60's. In addition to the local political problems, intensive agricultural research and delivery systems have been disappointingly low in some of the underdeveloped nations especially Nigeria as compared to the strings of successes in some Asian and Latin American countries. Several government initiatives and programmes aimed at improving food production and security have not yielded positive results either. Most of these programmes served as conduit pipes for government officials to carry away millions of dollars to foreign accounts. Various government agricultural programmes targeted at the poor farmers have not brought about the much trumpeted agricultural revolution - in terms of millions of people to feed and the produce to meet industrial needs. This paper takes a cursory look at patterns of agricultural growth in Nigeria, reasons for agricultural revolution, variables of sustainable agricultural development and strategies in developing a framework for public and private sectors participation in agricultural revolution in Nigeria.

Key words: Agricultural, development, programmes, revolution, government.

INTRODUCTION

Sustainable agriculture ensures adequate food security for the ever increasing population. Food production and adequate access to food are issues of top priority at major conferences and seminars in academic and professional gatherings all over the world.

The goal of achieving and maintaining sustainable farming system is rapidly becoming a top priority of agricultural and environmental protection policies in most developing countries. Also, the growth of 'the community' as a major focus of development, through which improved collective agricultural action can take place, has spread rapidly through development ideology since 1970s. In these developing countries, decision planners and field workers are faced with bewildering dilemmas; how to increase yields without degrading soil and water resources, how to meet production targets in the light of escalating farm input costs and foreign exchange

shortages, how to raise productivity of the small farm sector, how to narrow the gap between incomes in farming and other sectors (Whiteside, 1998).

In addition to these dilemmas, intensive agricultural research and delivery systems have performed disappointingly low in the least developed countries, particularly those of the sub-Saharan Africa for example Nigeria, Ghana, Cameroon, etc. This is in sharp contrast to some other developing countries in Asia and Latin America where there has been a degree of success, especially 'Green Revolution' technology, from international research centres and popularizing same in agricultural favoured areas (that is, those with favourable production potential and reasonably good market access). But even in these countries, little has been achieved in risk prone environments (that is, those which rely on rain fed crops, have harsh environments with uncertain rainfall, and poor physical and social infrastructure), and little has been done to address problems that impact directly on disadvantaged farming communities. The majority of the world's extremely poor

*Corresponding author. E-mail: ealademerin@gmail.com.

people lives in rural areas and have livelihoods which are bound closely to small holder agriculture as farmers, labourers, transporters, marketers and agricultural services to households whose income is principally agriculture-derived (Kydd, 2002). In the African perspective particularly in Nigeria, these small holder agriculturists may not bring about the much trumpeted agricultural revolution in terms of the teeming millions to feed and the produce to meet up industrial needs. Surprisingly, the situation is different and is on a very positive note in the Asian continent. According to Kydd (2002), "in the last half-century, across the globe, small holder development has achieved some huge success. The South Asian Green Revolution, a process which started three decades ago, made a direct impact on poverty and a strategic contribution to wider processes of economic development. Likewise the three decades of high productivity growth of Chinese small holder agriculture, following the phased introduction of market incentives, has been at the realm of China's impressive record in poverty reduction, at least in its earlier stages".

The bitter truth about the recurring failure in agricultural revolution has its origin in the political rivalry in the country which eventually culminated into the civil war of 1967 - 1970. The urge to survive the onslaught of the "Biafrans" made the Federal Government under General Yakubu Gowon to aggressively look for additional means of financing the war. Increased oil prospecting was now seen as a way out to the detriment of steady growth and development of agriculture up till mid 60's. Nigeria is yet to recover from the peril of this oil boom which has made it increasingly impossible to feed as food importation up till this moment is heavily relied upon.

According to Schafer (2002), the main characteristics of situations of chronic conflict and political instability among other include:

1. Existence of high susceptibility to violence.
2. Forced displacement; refugees and internally-displaced people.
3. Sections of the population deliberately excluded from enjoying basic rights.
4. Livelihoods highly vulnerable to external shocks existence of serious poverty.

All the above were and are common features in the particularly urbanized and industrialized South Western and South Eastern Nigeria. In addition, the South-South part of Nigeria is also not spared from the above stated political and economic mess. At present, the area is now bedeviled with the issue of hostage taking, youth restiveness, strives, etc. The youths in these areas have fled to the cities in search of the non-existent, white collar jobs. Upon the abandonment of agricultural practices, they find solace in robbery, hostage taking, civil strives, illegal bunkering, sea piracy, urban terrorism, etc. The

consequences of these on our economy are disastrous.

PATTERNS OF AGRICULTURAL GROWTH IN NIGERIA

In Nigeria, the agricultural patterns developed over almost two centuries have changed considerably in recent years but it is difficult to trace these changes precisely. Until the early 1970s, agriculture dominated Nigeria's economy but since then oil has held the principal position. Political decisions taken since independence have relegated agriculture to a secondary economic position. As a result agriculture has suffered and increasingly has occupied a back seat in economic terms. Stagnation had set in by the late 1960s and was even more apparent during the 1970s, the heyday of oil. Agriculture was sadly neglected and allowed to decline at a time when the opportunities for its development and expansion were greater than ever before. The oil palm, coffee and rubber plantations scattered all over the Eastern and Mid-Western regions suffered neglect, the same happened to the cocoa plantation of the West. The groundnut pyramids and cotton bales from the North gradually disappeared together with arable crops, vegetable crops, etc grown all over the country. The neglect of agriculture is therefore at our own peril.

Palm oil was one of the first West African crops for which there was a demand in Britain. By the 1830s, Britain was importing 10,000 tonnes of palm oil a year and using it for the manufacture of candles, margarine, cooking oil, machine oil and soap. By the 1880s, West Africa was exporting as much rubber as it could to the British market as the recent discovery of the vulcanization process had greatly stimulated demand. Until the Nigerian civil war of 1967 - 1970 (which directly and indirectly devastated the agricultural potentials of the Southern States), agriculture dominated Nigeria's economy contributing some 53% to Gross Domestic Product in 1965. By 1984, its percentage share had almost been halved and, the pattern of Nigeria's economic structure had changed dramatically during the era of independence. However, while agriculture's percentage share of GDP between 1965 and 1984 diminished, the absolute value of agriculture's contribution to GDP increased from \$2221 million to \$19,832 million. This suggests that although, there was a relative decline in agriculture, it may not necessarily have been absolute. However, it is difficult to say whether the rise was due to a real increase in the value of agricultural products or whether inflation in the agricultural sector was so high that it masked the stagnation that many believed was occurring.

The discovery of oil worsened the apathy already developed towards the tilling of the soil. Commercial production of oil began in Nigeria in 1957 after some 20 years of exploration by a consortium of Royal Dutch Shell

and British Petroleum. At this stage, no one appreciated how extensive the oil reserves would prove to be. Things really started to move when an oil exporting terminal was built at Bonny and linked to oil fields both nearby and across the Niger River in what is now Delta State. Off shore reserves were exploited next and production moved ahead rapidly, hesitating only during the Nigerian Civil war (1967 - 70). By 1980, oil was contributing over 90 percent of foreign exchange. There was evidence of Nigeria's new found wealth everywhere in the urban areas by the early 1970s; new roads, new buildings, new cars, new hospitals, schools, institutions of higher education. Accompanying this wealth was a common belief that Nigeria had at last found a way out of poverty. By contrast, the rural areas remained markedly unchanged and so the drift of manpower. Rural-urban migration is not new to Nigeria. However, as people became aware of the employment opportunities provided by the oil industry they left their homes and farms for the "streets of gold" in the cities. In most cases only a few family members migrated but sometimes entire families abandoned their farms for city life.

The over-dependence on oil has virtually affected all facets of our life and economic development. The government fully aware of this, has initiated so many programmes aimed at bringing people back to till the soil for farm productive ventures since the early 70s. Very little have been achieved from the agricultural revolution of NAFPP (National Food Acceleration Production Program), OFN (Operation Feed the Nation), Green Revolution, NALDA (National Land Development Authority), DFRRRI (Directorate of Food Roads and rural infrastructure), BLP (Better Life Programme for rural dwellers), FSP (Family support programme), NDE (National directorate of employment), etc. as they were bedeviled with corruption of the highest level. The concept of the various green or agricultural revolutions was fashioned after what was obtained in the developed world, in the case of wheat. But in Africa, Asia and Latin America, the slight difference in the concept centres on massive production of coarse grains, pulses and rice which the poor prefer through the simultaneous development of new varieties of food plants and improved agricultural techniques, resulting, in greatly increased crop yield. These agricultural revolutions have failed at various times because of the followings;

- Lack of functional agricultural policies or long term planning on the part of the government.
- Poor inter-institutional linkages and dispersion of training responsibilities between various ministries and agencies for example, MANR (Nigerian Ministry of Agriculture and Natural Resources) and DFRRRI, NALDA and MANR, ADP (Agricultural Development Programme) and DFRRRI, BLP and NDE, etc.
- Lack of adequate knowledge of recent development in extension systems, approaches and emerging priorities

(for example, pluralism, client orientation, farmer to farmer extension, gender issues, environment and sustainability, application of information technology).

- Negative attitudes to agricultural education and poor linkages between training institutions, extension, research, rural organizations, committees and households.
- Insensitivity of donors of national/local needs and situations, inter-donor competition and lack of dialogue.
- Lack of proper and progressive monitoring of various programmes and their regular evaluation to determine level of success or failures.

WHY AGRICULTURAL REVOLUTION?

One major fact known to mankind today is that in spite of much trumpeted application of science and technology to agricultural revolution for increased food production, a large chunk of the world population had to go to bed on empty stomach daily. Food is the most basic of the three basic human needs and apart from sustaining the individual and making him fit for work and for play; it is also a national power. A nation that is self sufficient or nearly self sufficient in food production will become a respected actor in the international stage and will be playing from the position of strength. The one that can not feed itself and therefore becomes a charity case must inevitably lose respect in the international arena. Food is a basic condition of human life but its importance goes beyond physical nourishment. Its production, processing, distribution and marketing are estimated to account for over half of all work done in the world today. Food carries enormous social, cultural, political symbolic and nutritional significance for all societies. Our biological, spiritual and ethical health depends on food in complex ways (Fine, 1998).

Agriculture in Nigeria used to be the power house of the national economy, providing more than 85 percent of the country's foreign exchange earnings and abundant and cheap food for the people. That was in the distant past as its prominent role in the economy ended in the late 60s. Today, agriculture is in a comatose state severely affected by the problems caused by years of neglect, contradictory and ill-thought-out government policies which lack consistency. Lately also, erosion has devastated most of the farmlands in the southern states of the country. The above negative factors coupled with lack of a sustainable democratic structures in most African countries particularly Nigeria in the last three or so decade have adversely affected their developmental patterns. Development in this case refers to any change that is judged by the people concerned (beneficiaries and target groups) as solving specific problems and improving their lives. Such betterment of people lives does not only include materials or economic improvement. Hence, development cannot only be measured with quantifiable

indicators such as Gross National Product or Increased Incomes. According to Salde (1991), development can also mean changing authoritarian political structures to more democratic participatory-ones. It is becoming increasingly evident that socio-political factors (in particular the absence of adequate governance, that is, 'the exercise of political power to manage a Nation's affairs') seriously constrain the development performance of Third World Countries.

Netherlands Farmer Development Minister Pronk (1991) once noted that for a society as a whole, freedom comes first, followed by food. "A society that is not free leads to power being vested in the hands of the few, and this power is inevitably used to deny others access to welfare. Democracy and classical human rights are therefore essential preconditions for sustainable and evenly distributed development." There is the common saying that "A man in need is not a free man". In support of that Roosevelt, a United States President, in his 1944 state of the Union address advocated the adoption of an "Economic Bill of Rights": "We have come to the clear realization of the fact that true individual freedom cannot exist without economic security and independence. 'Necessitous men are not free men'. People who are hungry and out of jobs are the stuff of which dictatorship are made". Farmers in the sub-Sahara Africa particularly in Southern parts of Nigeria are not "free". With their needs largely neglected by governments and research institutes alike, poor farmers have gained little from the overall process of rural development and in many cases have remained unable to break out of the low-income poverty cycle. Yet it is precisely this largely ignored group of traditional farmers, cultivating low-yield crops under harsh conditions, who hold the key to future increases in the nation's and world food production.

The challenge therefore, is to improve crops and develop technologies for, and with these farmers who will not in the foreseeable future-be-able to benefit from the type of green revolution package that has undoubtedly contributed to greater food security in many developing countries yet remains largely inappropriate and unattainable for this very large group of resource-poor farmers across Nigeria. The questions that readily come to mind are; are the resourceful poor farmers the genuine targets of government donor agencies and research institutes in Nigeria? Are they the real partners or just recipients of "technologies" they have little or no knowledge about? Within development literatures and among practitioners, there is wide spread agreement on participation being a key for a viable development. However, it is not clear what is really meant with participation. Does it really mean that people would have participated if they were informed about a development programme? What if they have felt moral, peer and less being on pressure to "donate" labour? Could people be said to be participating when the donor simply helps them to do what they are already doing? (Salole, 1991).

For these reasons stated above, there is need for agricultural revolution to be people focused and people oriented so as to increase food production, improve status and conditions of living of the rural farmers and also, the national economy. It is through these that a perfect sustainable livelihood development could be attained. Sustainable livelihood development has become a fashionable word and is currently used in issues relating to agricultural revolution. It is purely living, within one's means, or "putting back what is taken out". An important qualification of agricultural revolution or development is sustainability. There is no universally agreed-upon definition of the term sustainability. In general terms, sustainability is defined here as the continuation of benefit flows to people and communities at the grassroots level both after a development project or programme has been terminated and during the independent existence of an organization. Honadle and Sant (1985) suggested that the degree of sustainability can be measured as; "the percentage of project-initiated goods and service that is still delivered and maintained five years past the termination of donor resources, the continuation of local action stimulated by the project, and the generation of success or services and initiatives as a result of project building capacity".

The question that readily comes to mind is if there is any sustainable agricultural project since independence in Nigeria particularly Southern Nigeria? In recent years, the sustainable concept has been increasingly applied to the relationship between human beings and the environment. Three major interlinked aspects have to be considered at all times in this concept of agricultural revolution and sustainable development.

Sound environmental management and conservation of the natural resource base must be ensured.

The attainment and continued satisfaction of human needs for present and future generations must be assured.

Sustainable farming systems in the long term can only be successful if these are agreed, and implemented by the whole community.

They have certain characteristics and they are generally;

- a. Stable - do not disrupt ecological systems or overexploit natural resources instead there is a rational use of removable resources. The physical condition of the soil is maintained in terms of human build up, wastes, weeds, pests and diseases are suppressed, erosion is contained, etc. (These are problems to farmers in the Southern states of Nigeria).
- b. Regenerative, minerals and nutrients removed by crops are replenished in the soil; (a problem to the farmers in the Southern states).
- c. Productive and Profitable; capable of continuous reliable production levels - creating surpluses above the

family needs for minimum survival; (a problem too).

d. Resilient; have the ability to absorb changes in the face of adverse weather conditions, resist attack by pests, insects and diseases; (a problem too).

e. Appropriate; reflecting, and adapted to both the needs, skills, training and finances of the farmers as well as to the environment (constraints of temperature, rainfall, and soil conditions); a problem to farmers in the Southern Nigeria.

f. Self reliant; based on the efforts and ideas of the farmers themselves that is, minimizing dependence on imported chemicals and fertilizers (a serious problem).

g. Non-disruptive; do not destroy the socio-cultural environment, for example, forcing people to adopt practices which are against their normal behaviour and traditions, or resulting in migration of rural dwellers to urban areas. (This is a problem too to farmers in the Southern states).

A WAY OUT

For agricultural revolution to be meaningful and functional, some livelihood strategies would have to be adopted by the farmers in the Southern states of Nigeria. These strategies are the range and combinations of activities and choices that people make or undertake in order to achieve their goals.

Three broad clusters of livelihood strategies have been identified, and these are commonly pursued in combination, either simultaneously or in sequence,

- (i) Agricultural intensification
- (ii) Livelihood diversification and
- (iii) Migration (Scoones, 1998).

The strategies are built around five different types of assets according to Carney (1998) thus;

1. Natural Capital: land, vegetation, biodiversity, etc and environmental services.
2. Social Capital: social resources (networks, groups, trust, social relations, etc).
3. Human Capital: Skills, knowledge, good health and ability to work; Physical Capital: basic infrastructure (transport, shelter, communication, energy).
4. Financial Capital: Financial resources (savings, access to credit, bank loans, remittances, pensions, etc).

In developing a sustainable framework for public and private sectors participation in agricultural revolution, the following should be carefully considered by the government after which due harmonization could then be affected therapeutically. Such will include:

1. Active creation of a learning environment involving farmers in extension and research. This will stimulate,

enable and publicize research done by farmers through active farmer participatory research in Agriculture as developed by Biggs (1989).

2. Producing options in agricultural fields to choose from rather than fixed recommendations in areas of research planning in accordance with the priorities of small holder farmers, including women, and within an understanding of the overall farming system. Developing a functional working co-operation with powerful organizations in the global food system (for example, transnational corporations, multilateral agencies and other research institutions). This could be in areas where improved technologies are combined with indigenous knowledge of farmers, making learning to be participatory.

3. Going into collaboration to study the structural transformation in the agro-food systems in some of these Asian nations where the Green Revolution has been very successful in the last three decades. In addition, they are to understand the secrets of the successes of producers, processors, consumers, households and communities in order to manage risk and uncertainty.

4. Adapting locally based research responsive to diverse environments, not only looking at how to increase yield, but also on what is cost effective over the long term, and how to reduce costs, labour, risk and environmental damage.

5. Implementing policies aimed at the rural sector to be oriented toward providing incentives (engines) that stimulate households to participate also in rural non-agricultural jobs, as well as the capacity of households to respond to such signals.

6. The selection of policies should increasingly be informed by their capacity to generate wider impacts in areas of competitiveness of the agricultural sector and productivity in primary production, industrial, commercial and service sectors that characterize modern agriculture. It should also encompass technology promotion policies (research, technical assistance, transfer of technology, etc).

7. Richer and Poorer rural areas must be treated differently; in the former it will be to reduce transaction costs and in the latter, an active role on the part of the public sector is required. This involves promoting conditions to increase the attractiveness of these regions to the private sector (roads, electrification, telecommunication, irrigation, etc) as well as a strong focus of public investment in developing the capacity of rural households - through for instance, education, access to credit and activation of all markets - to participate in a broader range of income earning activities.

8. Government's involvement in extensive land preparation as was the case during the period that NALDA operated among the peasants in rural areas. Adequate irrigation channels should be provided in all the areas to serve during the dry months for water supply.

9. Production inputs' - Chemicals, fertilizers, planting

materials should be highly subsidized as a form of incentive and encouragements not only to individual farmers but also to producer organizations, groups and co-operatives by government and private organizations.

Finally, all the above will be useless if public policies and programmes for the agricultural and non-agricultural environments are developed by diminishing the resources which up till now have been available for agricultural development. After all, agricultural employment continues to be directly responsible for 60% of rural income, and that percentage increases significantly if non-agricultural income originating from activities directly related to and dependant upon agricultural production (agro industry, trade in inputs and products, machinery and transportation services, professional services, etc) is considered. The challenge consists in mobilizing additional investment and capacity, both public and private for the benefits of the rural poor farmers.

REFERENCES

- Carney D (1998) (ed). Sustainable rural livelihoods. What contribution can we make? Papers presented at the DFID Natural Resources Advisers' Conference, July 1998. DFID, London.
- Fine B (1998). The political Economy of Diet, Health and Food Policy. London. Routledge.
- Honadle G, Sant VJ (1985). Implementation for sustainability - Lessons from integrated Rural Development. West Harford. Kumarian Press.
- Kydd J (2002). "Agriculture and rural livelihoods; Is globalisation opening or blocking paths out of rural poverty? Agricultural Research, and Extension Network paper 121, Overseas Development Institute. London.
- Pronk J (1991). A world of difference. A new framework for development cooperation in the 90's extract reprinted in *epetentwicklungspolitik* 23/24/91, ppf-h.
- Salole G (1991). Participatory development; the taxation of the beneficiary? *J. Soc. Dev. Africa*, (6.2): 5-16.
- Schafer J (2002). "Supporting livelihoods in situations of chronic conflict: Overview of conceptual Issues" Working Paper London, Overseas Development Institute. p. 183.
- Scoones I (1998) Sustainable rural livelihoods: a framework for analysis. IDS Working Paper no. 72. University of Sussex Institute of Development Studies, Brighton, UK. 3-5.
- Whiteside M (1998). Encouraging sustainable small holder agriculture in Southern African in the context of agricultural services reform. Natural resource perspective. London. ODI/DFID. p. 36.