

Need for Consistency in Nigeria's Agricultural Development Policy and Programmes

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Introduction

Consistency in agricultural development policy and programs is tantamount to adherence to guiding principles (policy), strategies or tactics and programs that are compatible with the nature of agriculture, problems to be solved and objectives desired. Based on the location specificity of agricultural production as a bio-economic activity, defined as the science, business and art of growing crops and rearing animals to satisfy man's need for food, miscellaneous products and objectives, consistency also implies adoption of policies, strategies and programs that are compatible with prevailing ecological conditions and socio-economic milieu in target areas for agricultural development. The policy, strategies and programs should always also be compatible with, and meaningfully adjusted according to the prevailing understanding and knowledge of the agricultural development process and complex interactions thereof. Lastly, there is also an often overlooked maxim that agricultural development policy, plans, strategies and programs are most successful when a long-term perspective is adopted rather than the short-term approach of crash programs and short bursts of activity. Agricultural development should be a continuous process which involves sustained commitment in policy, planning, allocation of resources and management of research linked with extension, training and infrastructural development. Consistency does not rule out the need for periodic reviews, modifications

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and mid-course corrections necessary in keeping along the path of progress. Agricultural development in this regard is likened to a car or ship which has to be steadily steered towards its destination by the shortest route wherever possible or by skirting obstacles that are strewn on its path without forgetting the compass direction of the final destination. It is however, paradoxical that as indicated below agricultural development usually calls for changes in some elements of traditional or conventional agricultural practices that have become out-moded, ineffective in the achievement of objectives of farming today or not relevant to needs and circumstances of farmers. In this sense consistency would appear to be antithetic to development which requires carrying degrees of minor, major, rapid or drastic changes depending on circumstances. But even then these occur overtime and not every one year or two.

‘Agricultural development is a trend in the technologies, organizations, activities, and values of a culture that increasingly brings all of its present and potential farm-land into its most effective use, combined – after this becomes feasible – with increasing agricultural production per farm worker’ (Definition 3). Or it also means ‘trend in technologies, organizations, activities and values of a culture that results in an increasing production of products useful to man through growth processes of plants and/or livestock – and including in some cases fish culture – on farms, (*Definition I, Mosher, 1976*).

Mosher (1976) also gives a third definition (*Definition 2*) which gives emphasis to increasing production per unit of land unlike *Definition 3* which involves increases in production per farm worker and *Definition 1* which places emphasis on increasing production per unit of labour. These definitions stress the fact that in most countries, the definition of agricultural development may be regarded as appropriate when it is related to the stage of development. It may become inappropriate after some turning points in the stages of development related to major goals in agricultural development. In relative terms, this means that agricultural development goals in developed countries of the world are different from those of developing countries. But in the world of today in which African countries do not exist in isolation and as a result of colonial and other influences, are experimenting on different strategies within one country and sometimes within a specific agricultural development program, the following definition may be preferred:

Agricultural development is a continuing process of change or transformation of traditional and largely subsistence agriculture into a more pro-

ductive and commercialized farming enterprise producing food, raw materials or various products largely for sale.

Role and importance of agricultural development

Agricultural development plays vital roles in the economies of nations generally and especially in those of developing mainly agricultural countries. Roles of agriculture in the economy of developing countries include:

- * providing food for the rapidly growing population and increasing urban demand.
- * employing a large proportion (over 50%) of the population or labour force.
- * facilitating release of labour to industry and other sectors of the economy.
- * producing raw materials for industry locally and elsewhere.
- * contributing to domestic savings and capital for development.
- * provision of a growing market for locally manufactured goods.
- * source of foreign exchange earnings and contributing significantly to the gross domestic product (GDP).

It is obvious that overall economic growth in most developing countries largely depends on agricultural growth (Revelle, 1968). But agriculture remains a component of general economic development. While many non-agricultural industries are based on agricultural raw materials which include food products most resources used in agriculture are non-transferable to other types of production. But it is the efficiency and magnitude of growth in agricultural production that determines the extent to which agriculture supports development of other sectors of the economy. On the other hand capital from agriculture may be used for education, industrialization and services which result in rising incomes and demand for food and agricultural products. These in turn result in rising farm incomes and improvement of rural standards of living and welfare. Overall economic development, therefore includes not only industrial development but also rural development which in turn promotes agricultural growth.

Essentials for Agricultural Development and Factors Influencing Them

The various elements of factors necessary for agricultural development include:

1. Continuous and systematic research that develops new techno-

- logies and finds solutions that enhance agricultural production.
2. Effective marketing system for agricultural produce.
 3. Presence of attractive production incentives for farmers to increase agricultural production or carry out associated services.
 4. Existence, maintenance and operation of an efficient transportation and communication system that reaches most farms.
 5. Local availability through manufacturing or importation of the equipment and other inputs required by farmers at reasonable prices, (Mosher, 1966).

All these elements interact with each other in agricultural development. Their presence tend to reinforce each other but in certain situations one or two of them may play crucial roles in determining success attained or progress made. The effects of these factors are synergistically strengthened by the others which Mosher (1966) designates as accelerators (Appendix I).

Nigeria's Agricultural Stagnation and the African Food Crisis

The essential factors that favour agricultural development and their accelerators indicated above have been identified since several decades ago. The strategies for increasing food and agricultural production generally are also well know. A list of these is presented in table I. Moreover we can reasonably reliably stipulate the necessary ingredients of policies which constitute the umbrella under which the varous factors and their accelerators interact to ensure realization of at least 3 – 4% annual growth in agricultural and food production needed to eliminate malnutrition and the current food crisis in Africa. The scope, comprehensiveness and unpreserveness of the Lagos Plan of Action to which OAU countries including Nigeria and our last four development plans attest to these.

Yet up to 1970 Nigeria relied on agriculture for supply of food, foreign exchange and rawsmaterials that kept her economy going. Since then without petroleum it is inconceivable what the magnitude of economic hardship malnutrition and poverty would have been the situation in most of Africa is even worse. The latest FAO World Food Report (FAO, 1984) noted that events in 1983 chronicled the African food crisis' and reported that in 1983 –

- (1) drought spread over a large part of Africa north and south of the Sahara with the severity highest in southern Africa.
- (2) herders in many countries lost animals due to the virulent livestock disease, rinderpest.

Table 1
*Alternative strategies for increasing food and agricultural production
in relation to current priority that they merit and are given.*

		Priority needed	Priority given
(1)	Expansion of area under cultivation	M	H
(2)	Increase in quantity and improvement in policy of food produced per unit	H	L
(3)	Mechanization and appropriate technology	H	L
(4)	Improved post harvest handling, transportation, storage and processing	H	L
(5)	More food from livestock or farm animals	H	M
(6)	Increased and more efficient use of aquatic resources of ponds, lakes, rivers, seas and oceans.	H	L
(7)	Increased and more efficient use of forest resources.	M	L
(8)	Non-conventional food sources	L	N

+ H = High
 M = Medium
 L = Low
 N = Negligible

Source: Okigbo (1982).

- (3) then two of the most important staples, the cassava and maize were attacked by pests (in cassava the mealybug and green spider mite) and maize the larger grain borer.
- (4) the continents for capita food production since 1970s has been dropping by about 1% per annum.

This paper considers to what extent consistence in policy strategies and programs are responsible for or contributory to Nigeria's very poor performance of the agricultural sector.

Basis of Obvious Inconsistencies in Policy, Plans and Programs

The most serious and widespread cause of inconsistencies in agricultural development efforts in Nigeria and in fact Africa particularly and the developing countries in general is political instability. Political changes may be necessary and formal or constitutional but very often unconstitutionally rampant. The change from colonial to independent status in Africa during the wind of change in the 1960s is a necessary and desirable one necessitated by natural justice. Constitutional changes are also desirable as long as they follow a formalized and democratically or publicly accepted rules of succession. This kind of change is currently uncommon in most African countries. Non-constitutional political succession involve coups which are sometimes necessary but are usually more disruptive and associated with civil strife than the other changes.

Since agriculture usually involves a very large number of people and agricultural modernization or transformations require decades rather than months to accomplish, some modicum of political stability and continuity is imperative for success in agricultural development in a country (Millkan & Hapgood, 1967). All political changes generally have disruptive effects on policies, plans and programs in agricultural development. Consequently, there should be constitutionalized policy, institutional and administrative measures to ensure continuity in agricultural development. But since some political changes are also necessary for correcting ineffective agricultural development policies, plans and programs, constitutional, institutional and administrative measures provided to ensure stability and continuity should also embody built machinery for sequential evaluation and modifications. Specific example of these provisions will be discussed in different sections of this paper.

Political Changes:

The major political changes in Nigerian history include:

- * 1900 Royal Niger Company administration superceded by Protectorates under thhe British Crown.
- * 1914 Amalgamation of Northern and Southern Nigeria.
- * 1946 Richards constitution which provided for Central legislature and three regional houses of assembly.
- * 1952 Macpherson Constitution with increased regional autonomy.
- * 1953/54 Federal Constitution with definition of functions between Federal and Regional Governments and agricultural extension became a regional responsibility
- * 1960 Self – government on October 1, 1960.
- * 1962 Southern Cameroun ceased to be part of Nigeria and Northern Cameroun was amalgamated with Northern Nigeria.
- * 1963 Federal Republic of Nigeria formed as member of Commonwealth.
- * 1966 Federal Military Governments –
 - Creation of 12 States in 1967 and outbreak of Civil War:
 - End of Civil War in 1970.
 - Gowon regime overthrown in 1975
 - General Obasanjo succeeded General Murtala Mohammed after abortive Coup in 1976.
- 1979 – Return to civilian regime under Alhaji Shehu Shagari of NPN as Executive President but with certain states under UPN, NPP, PRP and GNPP.
- 1984 – Federal Military Government succeeded civilian regime under Alhaji Shehu Shagari.

Major Policy changes Associated with Political Changes

Prior to 1900 when commercial trading companies held controlled affairs of Nigeria stimulation of trade in extrative forest industries on spices, ivory, palm oil, rubber, peppers, etc., laid the foundation of a viable cash crop export economy. With establishment of the British Colonial administration in 1900 there was further encouragement and stimulation of agricultural development with emphasis on cash crop production. Phenomenal growth in export crops such as oil palms, rubber, cocoa, groundnuts, cotton, bennisseed, etc., occurred. But there was expressed British policy

in support of small-holder cash crop production and denial of rights to commercial companies such as Lever Brothers for establishment of plantations. Governor Hugh Clifford's reasons in support of this stand in an address to the Nigerian Legislative Council in 1920 were as follows:

As further agricultural industries in tropical countries which are mainly, or exclusively, in the hands of the native peasantry managed by Europeans, because they are natural growths, not artificial creations, and are self-supporting, as regards labour, while European plantations can only be maintained by some system of organized immigration or by some form of compulsory labour; (b) Are incomparably the cheapest instruments for the production of agricultural produce on a large scale that have yet been devised; and (c) Are capable of every record of the past . . . For these reasons I am very strongly opposed to any encouragement being given . . . to projects for creation of European owned and managed plantations to replace, or even supplement, agricultural industries which are already in existence, or which are capable of being developed by peasants. Forest, (1981) in page 224 in Heyer, Roberts and Williams (1981).

Although this policy and stand of the British Government was partly attributed to efforts to avoid land issue controversy, this was not a uniform British policy especially in the Far East or in areas suitable for British settlement in parts of East Africa and South and Central Africa. It must also be admitted that limited plantations establishment (5,856 hectares) by the UAC was allowed in 1936 and some of other plantations established in other parts of the West Africa failed. But there is no doubt that this policy is now partly responsible for the decline in cocoa, oil pams and other tree cash crops production and Nigeria becoming a net importer of oil palm products instead of a lending exporter (Compare with a similar position of Ghana and positive growth of production in Ivory Coast, Cameroun and the Far East). Growth in production of cash crops in general was stimulated by research, marketing and pricing, and infrastructural development policies. Another colonial policy which had a positive influence on agricultural development was that of plant introductions especially during 1900–1940. Crops affected included rubber, groundnuts, cotton, some sub-tropical vegetables and fruits, etc. Food crops were given very low priority during the colonial period and during more than a decade after independence. Inconsistencies noticeable here include (1) higher priority given to cash crops instead of striving for a meaningful balance between cash and food crops in anticipation of increasing demand due to rapid population growth and rising income and (2) the introduction and interest in exotics some of which sometimes per-

form better than in their original home resulted in neglect of several indigenous food crops which continues until today. Thus the initial advantage of diversification of crops through introductions has not been sustained because the neglect of indigenous species has diminished realization of the overall potential of diversity of food and non-food crops available in Nigeria.

Eicher and Baker (1982) discussed the areas of policy issues in food and agriculture including political ideology, planning and agricultural modelling, large versus small scale farms, marketing Board and Commodity Boards, agricultural prices, rural development programs and accelerated food production campaigns. Some of these policy areas are related to strategies and activities used to achieve certain objectives. The problem of planning and accelerated production programs merit special consideration.

Political Ideology This usually forms the umbrella under which all policies and development plans have fallen captives to either capitalism or socialism and sometimes varying degrees of mixtures of both. This has sometimes been due to influence of prevailing political ideologies of the colonial home governments and influential political parties but also it may be due to antagonism to the ideologies of oppressive colonial governments and supports from the East or West in attempts to exploit the situation. There is no doubt that socialism in Ghana, Mali and Tanzania has resulted in agricultural development policies that nurtured programs involving state or collective farms which have not generally been successful. Sometimes other countries such as Nigeria with dual ideological leanings or even others that are more capitalistic than socialistic have adopted socialist organization strategies such as in farm settlements discussed below either to ensure rapid progress in agricultural development not encumbered by prevailing constraints that bedevil traditional agriculture or as an attempt to ensure equity through programs that do not favour only a few. Most state farms failed because they were inconsistent with the prevailing individualistic tendencies and socio-cultural institutions of various communities in which they were tried. It is noted however that farm settlements in Nigeria as discussed below were equally unsuccessful.

Large Scale Versus Small Farms and Farm Settlements

As indicated above, during the colonial era the Imperial Government did not favour plantations and large scale farms in West Africa. Forrest (1981) however, reported that partly as a result of Fabian-inspired vision of increased production of oilseeds through large-scale mechanized cultivation

supported by public funds under foreign management, there was launched in 1954, a Niger Agricultural Project at Mokwa which not only aimed at increased products of groundnuts like the Tanganyika groundnut scheme before, but equally failed disastrously. Thus, large scale farms or projects were not only inconsistent with colonial government policy but they were also inconsistent with the realities as they by-passed millions of farmers involved in agriculture.

Although no more large scale farms were tried during the colonial era there was, according to Forrest (1981), interest in group farming the objective of which was

. . . . to secure improvements in agriculture through the application of capital particularly although not necessarily by mechanisation and through more efficient land utilisation. . . . by group farming we do not mean collective farming. . . . but the grouping of a number of individual holdings with only that degree of reorganisation and common control which is necessary to secure the benefit of the capital services provided: (United Kingdom, 1950).

These started with the Anchau Scheme in 1937 and followed by the Kwa Falls Scheme, Shendam Scheme, Wawa Bush Scheme and the Kontagora Settlement Scheme. Apart from the Anchau Scheme which achieved a measure of success but failed in an effort to eradicate the tse-tse fly, results ranged from little success to total failure. A wave of plantations and mechanized food farms were also launched in 1948 in Western Nigeria for rehabilitation of areas ravaged by swollen shoot of cocoa with funding from the Regional Development Board. Forrest (1981) quoting Teriba (1966) noted that these projects demonstrated the futility of large scale farms rather than their viability because of the following defects:

- lack of detailed investigation of soils, climate or marketing.
- there was at least one major project in each political division in the regions.
- high overhead costs, and
- persistent neglect or misapprehension of local labour supply conditions resulting in irregular labour supplies, high cost of housing and social amenities for migrant labour.

Despite the disappointing results of previous settlement schemes, the Western Nigeria Government launched a farm settlement scheme in 1959 based on the Israeli Moshavim and Gezira Scheme systems of production

and farmers organization. These settlement schemes have been reported to be a failure. The fact is that they exhibited varying degrees of success but fell far short of expectations. According to Forrest (1981) their failure was ascribed to attempts to transfer institution from an environment with a totally different historical experience and ideological commitment. Farm settlements were also established in Eastern Nigeria in addition to plantations by the Eastern Nigeria Development Corporation. All these projects exhibited some bias against small farmers except the oilpalm rehabilitation scheme which was launched as a result of disillusionment with plantations on which heavy investments were made and limited participation and low economic returns from estates and settlements. If any marked success was achieved it was obliterated by the civil war.

The foregoing indicated that large scale food farms, plantations and farm settlements were not much successful. Failure of farm settlements was partly due to their being inconsistent with the socio-economic conditions and ideological commitment. Plantations and estates were also not very successful because they were mostly public sector enterprises owned and managed by parastatals. Although the British Government favoured smallholder agriculture, more efforts and resources were allocated to settlement schemes and plantations with the neglect of the small farms. Farm settlement also failed because some were established in wrong locations and the way they were operated were inconsistent with prevailing circumstances in Nigeria. No genuine attempts were made to reorganize and adapt them to Nigerian conditions.

In general, all our National Development Plans of which there have been four from the First (1962–1968) to the Fourth (1981–1985) have given emphasis to public sector involvement in agricultural production through parastatals such as the Western Nigeria Development Corporation (WNDC) and Eastern Nigeria Development Corporation (ENDC); River Basin Development Authorities (RBDA's), the National Grains Production Company, National Livestock Production Company and the Nigerian National Fish Company at regional, state and federal levels. Only the extension programs in the Northern States in the First Development Plan 1962–1968, the Oil Palm Rehabilitation Scheme in Eastern Nigeria during the same period reviewed by Wells (1969), the National Accelerated Food Production Program (NAFPP) from 1972–1975 in the Third and Fourth Development Plans, and some aspects of the Operation Feed the Nation (OFN) and the Green Revolution Program involved the private sector. With the exception of the NAFPP larger budgetary expenditures were devoted to

public sector agricultural production and development efforts than the private sector. While it may be argued that there is a measure of consistency in giving priority to the public sector in all the development plans there is considerable inconsistency in (1) the policy and strategy being incompatible with the fact that most of the agricultural production and over 90% of the food production is done by the private sector and (2) the inconceivable fact that much larger budgetary allocations were continuously made to public sector projects than is commensurate with their contribution to Nigeria's total production and their disappointing performance. The recent decision of the Federal Government to phase out parastatals and sell them to private sector is a step in the right direction and we look forward to when it materialises.

Marketing Boards

Marketing Boards represented a policy measure for ensuring stable market prices and reducing seasonal and periodic price fluctuations in cash or export crops such as cocoa, oil-palms, coffee, rubber, groundnuts etc. The boards were successful in effecting savings in foreign exchange because farmers were paid half to two-thirds of the world market prices (Bauer, 1954 and Eicher and Baker 1982). It was also observed that export producers in Nigeria lost 27% of their potential gross income through Marketing Board taxes during 1947-61. Marketing boards savings were used as government revenue and capital for development projects, financing political party activities and so on instead of stabilizing prices. While it would appear justifiable to use agricultural surpluses to finance activities in the other sectors of the economy, it is inconsistent with the objectives for which the boards were established if as claimed by Idachaba (1973) the marketing boards dampened producer incentives.

Agricultural Pricing Policy

Governments have often set prices of major agricultural commodities in order to (1) stabilize prices, (2) foster self-sufficiency (3) generate top revenue, (4) curb the profit of middlemen and (5) control cost of hiring for urban consumers (Eicher and Baker, 1982). In Nigeria, government has often set prices of major commodities to provide incentives to farmers and encourage increased production of such crops as maize and rice. It often turns out that the prices are not attractive enough since they often fall

below retail market prices. Sometimes government is unable to pay for produce purchased or fails to pay in time thereby discouraging farmers. By the way they operate they had adverse effects on (1) gap between rural and urban income, (2) the incentive to produce food and export crops, (3) ability of governments to establish and maintain food reserves, and (4) employment opportunities in farming, processing and rural industries (Eicher and Baker, 1982).

Agriculture Versus Industry

There has been a tendency through the years for governments to give higher priority to industrialization than to agriculture. Yet the role of agriculture in economic development because agriculture a source of food and industrial raw material, earner of foreign exchange, source of capital, market for industrial goods and promoter of release of labour to industry shows that there is considerable interrelationships between agriculture and industry. Industry produces machinery and inputs used in agriculture such as fertilizers and pesticides. There are industries (agrobased industries) that utilize raw materials produced in agriculture but it is industry in turn that produces machinery and equipment used in processing. Transportation and related infrastructural facilities play vital roles in agriculture. Therefore any policy which gives higher priority to industrialization at the expense of agricultural development is rather unrealistic. According to Dumont (1966) overall economic development should be buttressed on agriculture and industrial development of a higher productive and efficient agriculture is a pre-requisite for industrial development a reasonable balance needs to be struck between agriculture and industry, the fact that agriculture is a multidisciplinary activity is not in doubt and since agricultural development is a component of general economic development, it should also be a component of overall general policy. Every independent country has as components of national general policy (1) science policy, (2) educational policy, (3) economic policy and (4) foreign policy (Spaey *et al* 1971). Very often agricultural development policies and industrial development policies are sub-sectors of science policy since it is technology which results from scientific research nurtured by science policy. There is need for consistency and compatibility among science, education, economic and foreign policies in so far as they interact with agricultural development. We should ask ourselves whether policies in these areas of national general policy are compatibly consistent with national development objectives.

Science Policy

Since research generates technologies that result in high rates of growth in agriculture and associated industries our science policy should be consistent with the priority our government gives to agriculture. A major area of science policy is research and development (R & D). Priority given to R & D is often measured by the percentage of GDP allocated annually to R & D. Nigeria currently spends less than 0.3% of her GDP on research and 18 institutes out of 22 are agricultural. Idachaba (1980) estimated that allocations to research in 1975–1980 amounted to only 0.3% of all Federal Government expenditure while the average annual contribution to agriculture in 1975–1980 amounted to 21%. He also calculated that allocations to research per Naira generated by agriculture amount to only ₦0.0015 in 1962–1968 and ₦0.0042 in 1975–80. Idachaba's calculations based on allocation to research institutes presents a better picture even though it was regarded as inadequate since the actual amount released as calculated by Okigbo *et al* (1981) amounted to only 25–80% annually from 1975–1980). Most developed countries spend 2–3% of their GDP on scientific research as compared to less than 0.5% in developing countries. Okigbo *et al* (1981) recommended that Nigeria should by 1985 be spending 1.5 – 2.5% of GDP. With the current austerity in Nigeria where salaries cannot be paid in full a fraction of what is recommended may not be met. Another index of consistency of science policy with agricultural development policy is the amount of basic research conducted. Basic research is very important in agriculture and applied biology since technologies used to manipulate them cannot be horizontally transferred from elsewhere. Local research to generate adapted technologies in different ecological zones since they have to be ecologically sound, ecologically viable and socially acceptable is necessary for rapid agricultural development. Here again there is inconsistency in relation to the amount of basic research conducted in our universities which worldwide are centres of basic research. In the 1970's Okigbo *et al* (1981) estimated that about 6% of research in our universities was basic research while 24% was partly basic and partly applied as compared to 69% in American Universities at about the same period. While there are people who hold the view that basic research is a luxury it must be emphasized that especially in agricultural and the biological sciences progress in applied research is often constrained by limitation in basic research.

Educational Policy

Nigeria allocated about 19% of the total budgetary allocation to education in the Third Development Plan the objectives which include (1) equalising access to education countrywide, (2) reforms in educational contents to render it meet the socio-economic needs, (3) consolidation and development of higher education to meet manpower needs (4) streamlining and strengthening machinery for educational development, (5) rationalising financing of education so as to make it more adequate and efficient and (6) making impact in the area of technological education to meet growing needs of Nigeria. A policy stipulation that should ensure that objective of meeting needs for research and technological education is that the ratio of students in the sciences to those in social sciences and humanities in institutions of higher education should be 60:40. At present this is rarely approached and very often even the opposite (40:60) is timely. This is likely due to the fact that science teaching in primary and secondary schools is deficient and therefore only few students are ready or prepared for science subjects in higher educational institutions. Moreover our objectives and strategies in education should have changed during the early post-independence era where interest was to fill vacancies left by expatriates in the public service to the present situation where in agriculture we should aim at also satisfying demands of the private sector, employment in farming as a profession and in innovative research. While number of years for bachelor's degree in agriculture has increased from 3-4 or 4-5 as the case may be to ensure more practical content of courses we are aware that facilities for practical work either in universities or private enterprises are inadequate or very limited.

Economic Policy

The economic policy of Nigeria consists of component policies in commerce and finance, agriculture, mining and manufacturing, transport, communications, power and energy, and social services. Of importance in this regard, for example, is the need to minimize the extent of importation of raw materials used in industry in addition achieving self-sufficiency in food production and encouraging import substitution to minimise losses in foreign exchange. In this process, until recently, research for substitute raw materials was limited and lack of knowledge of our local resources and reserves in addition to shortage in number and quality of manpower required constitute major constraints. Unless major savings in foreign exchange can be effected through reduction of legal and illegal importation of articles that

compete with local ones there will continue to be shortage of funds for research, education, industrialization, etc.

Foreign Policy

An area of foreign policy which significantly affects agricultural development is international cooperation and the scope of activities that are covered. During the colonial era there were inter-territorial agricultural research organizations from which countries involved benefited while sharing expenses with other countries. Since 1957 those in West Africa have broken down and Nigeria has had to suffer higher overheads in research since she had to develop her own separate facilities. It is also true that more coordination or R & D in ECOWAS countries could result in more cost effective attainment of regional self-sufficiency in food and renewable resources through trade among ECOWAS countries based on commodities in which various countries have ecological and economic advantages. In this regard weaknesses arise from instability in various countries, disharmonies in program implementation and ideological differences between francophone and anglophone countries as evidenced in WARDA and ironically sometimes weakness in foreign policy due to Nigeria's big-brother relationships with other African countries in which fear of domination makes us not to be as inward looking as may be necessary. Ethnic relationships have sometimes adversely affected agricultural development as evidenced by illegal border trade in sub-sidized fertilizers and across the border sales of cocoa with financial losses to Nigeria. International cooperation is important in River Niger and Lake Chad development. Recent drying up of the Niger at Niamey is a result of lack of coordination in development. Moreover, reliance on foreign aid for agricultural development in Africa has its advantages and disadvantages.

Apart from intersectoral policy interactions, there are intra-sectoral inter-relationships where inconsistencies occur. These are noticeable at both levels of policy, planning and development programs. Examples include agriculture proper (crops and livestock) versus forestry and fishery; agriculture versus industry, construction and transportation versus agriculture, mining and quarrying versus agriculture and so on. Our continuing emphasis on increasing agricultural production mainly by expansion of area under cultivation has adverse effects on forestry and wild-life since there is currently shortage of fuelwood and timber in addition to raw materials such as wood pulp needed for self-sufficiency in paper. Disregard of soil conserva-

tion measures in agriculture with respect to deforestation and tillage and various aspects of road construction have resulted in serious soil erosion and blocking of water-ways by sedimentation. Policies and strategies used in road construction currently do not include measures to minimize soil erosion which threatens agricultural land. Similarly, industrial pollution with adverse effects on agriculture is increasing especially with respect to oil pollution and industrial waste. In mining, especially in open cast and quarrying sites, there are no effective implemented regulations for restoration and revegetation of disturbed areas and there is currently limited research to develop cost effective methods of achieving these objectives.

INCONSISTENCIES THAT MAY ARISE IN PLANNING AND PROGRAMS

Varying degrees of inconsistencies and associated problems may arise as a result of the following:

1. **Ideological basis for a plan** may be lacking and the stance taken by the planner may not be compatible with prevailing or conjectured ideological leanings of politicians and executors.
2. Assumptions on which plans are based may be based on wrong premises or on data which are inaccurate or incomplete.
3. Planners' understanding of the overall environmental background and conditions in the target area of the plan may be unrealistic, weak or distorted.
4. Objectives of the plan may not have been comprehensively taken into account in planning and formulation of provisions for achieving them.
5. The time span covered by a plan may be out of step with the period of implementation.
6. Provisions in the plan for achievement of policy objectives may lack measures that link the past, current and forecast future related projects and trends.
7. Where several plans, programs or phases of plans occur in a sequence some provisions in each of them may in one way or another be disruptive to progress made in preceding or succeeding ones.
8. Many plans for agricultural development often provide for short-term measures that are attractive to the politician who wants to make impact in four years or less and are therefore inconsistent with the long-term nature or long gestation periods inherent in agricultural development programs.

9. Plans for certain programs may be realistic but provisions made for their implementation may be inconsistent with the circumstances or available resources for their implementation.
10. In a multidisciplinary problem such as agricultural development the scope of disciplines that are involved may not be given due consideration in the plan or provisions made for implementation.
11. Although it would appear that there is continuity in the public service that should ensure that there is a measure of consistency in plans and programs prevailing circumstances sometimes force civil servants to dance to the tune of politicians than to face realities. Space does not permit a full discussion of the above situations but a few instances may be cited to illustrate the points made. Nigeria has conceptually passed through four plan periods which in some cases overlap. First, there is the colonial period when plans were commissioned by the colonial office and the objectives given higher priority on interest of the colonial power than on the welfare of Nigeria. Secondly, there is the early post independence period when FAO or Foreign consortium of Universities or Consultants were engaged in planning. Thirdly, there is a period when Nigerians undertook planning but still did so on the basis of ideologies or concepts that were more foreign to Nigeria or on the basis of very scanty knowledge of Nigeria and limited accurate data. Fourthly, there is the current period where we have an explosion of Nigerian consultants exhibiting varying degrees of disciplinary balance and competence. All suffer from inadequacies in and lack of data for planning.

Agricultural development plans by FAO 1965–1980 (FAO, 1966) and Consortium for the study of Nigeria Rural Development (CSNRD, by Johnson *et al* (1969) and miscellaneous authors were all overtaken by events that resulted in civil war and the civil war itself. However they remain reference points for planning and policy formulation under the circumstances for which they were based. Although they were up-dated by Agricultural Development in Nigeria 1973–1985 in which Nigerians played a dominant role, this work suffered from deficiencies in reliability of data and unreliable census figures. Nigerian planners during the First and Second Development Plans were at that time still partly dominated or influenced by foreign ideo-

logies and superficial concepts about Nigeria and did not exhibit the relative maturity that now exists about Nigerian realities. Moreover now they can boast to have more even though deficient locally generated statistical data. The inconsistencies and deficiencies in development plans have been aptly summarized by Eicher and Baker (1982) in the assessment of planning in 1960–80 according to Professor Aboyade as concluded that ‘for most of tropical Africa planning over the past two decades has been little more than false hope’ and at the same time attribute to Rimmer (1969), a University of Birmingham economist the observation that ‘any resemblance between development plans and actual course of economic change in Africa and other poor nations is purely coincidental.’ There is no doubt that these conclusions are valid since despite inconsistencies referred to above implementation still remains more of a problem than planning.

It should be noted that sometimes plans are not based on comprehensive view of objectives; and as indicated above time lags exist between formulation and implementation. For example, the problem of attaining food self-sufficiency remains our most serious challenge in agricultural development. Idachaba (1980b) in his study on Food Policy in Nigeria Toward a Framework Analysis concluded that ‘much of the inability of the food and agricultural sector to perform adequately in Nigeria and other developing countries can be traced to failures of policy and that policy failures are in turn the result of a perennial failure to operate within a proper conceptual framework. The interrelations among sectors, subsectors, policy instruments, programmes and projects are not often perceived by policy makers and their advisers with the result that most policies turn out to be responses to major episodes. Episodic policies are, by their very nature, ad hoc and only attempt to take care of problems of the moment.

Policies are initiated and institutions created in a fashion that results in inconsistencies, duplications, frequent policy revisions as well as policy reversals. After discussions on methodology and trends and inter-relationships observed, Idachaba argues that issues of stability in food policy were closely related to the degree of consensus among the political and professional leadership on fundamental principles guiding food policy’ and then it is suggested that ‘the more consensus there is on the fundamental guiding food policy *the more stable will food policy be, all things being equal.* The observed frequent food policy revisions and reversals on the Nigerian scene can be attributed to this lack of consensus’. Idachaba further considered the role of values and lags in food policy process and concluded:

'Particularly troublesome in Nigeria and other developing countries are: the lag between problem existence and problem recognition; between problem recognition and diagnosis; between problem diagnosis, prescription and corrective policy initiatives and finally, the lag between policy implementation and policy impact. A major part of the policy process in developing countries is to shorten the length of these lags'.

Program Inconsistencies and Changes

Although since the end of the civil war all successive governments are at least on paper committed to the Lagos Plan of Action with respect to achieving food self-sufficiency and restoring agriculture to its paramount position before the petroleum boom and escalating food import bills, the following more or less crash or special projects were launched to boost food and agricultural production:

- 1972–1975 National Accelerated Food Production Program (NAFPP).
- 1976–1980 Operation Feed the Nation (OFN);
- 1980–1983 Green Revolution Program.

Space does not allow a full discussion of these alternative programs for which details should be sought in Okigbo (1982 and 1984) and Aribisala (1983). It is, however, pertinent to observe that only the NAFPP program realistically gave priority to increasing food production on a majority of farms that grow over 90% of the food. But it took some time to get started by which time change in government ushered in the OFN which turned out to be mainly a slogan which alerted people about seriousness of the food situation but did nothing to improve on the NAFPP. The Green Revolution also regarded the small farmer as the centre piece/target for accelerated food production and based on the Idachaba (1980a). 'The Green Revolution: A food Production Plan For Nigeria! The Green Revolution did achieve some successes but as several public sector production companies were set up considerable amounts of investment yielded very poor results. The Green Revolution Program did successfully commission several studies on various commodities and topics including review of agricultural research Institutes but the recommendations could not be implemented for lack of funds. It is interesting, however, that the Federal government is now interested in re-

inforcing various successful aspects of the NAFPP, and it is hoped that the report of the Aribisala Panel will give due consideration to our experiences in these programs.

INCONSISTENCIES IN THE ESSENTIALS FOR AGRICULTURAL DEVELOPMENT

As indicated above, five factors were identified by Mosher (1966) as essential for agricultural development. Some inconsistencies in their provision in Nigeria are reviewed below.

Markets for Farm Products

Markets for agricultural products are essential for commercialization of agriculture. This takes into account the existence of demand locally or elsewhere, a marketing system through which producers sell farm products and farmer's confidence in the system that encourages him to use it. Currently a more well defined and operative marketing system exists for cash crops but no similar one exists for food crops. Demand for food crops and even some raw agricultural products exist. There is a system of daily markets, including supermarkets in urban areas, 4-day, 7-day, 8-day and other periodic markets. Although we give priority to food in agricultural development lower priority has been given to measures to ensure that farmers get maximum returns for their labour and that consumers are assured of reliable quality of produce. In food crops, especially, farmers are still at the mercy of middlemen who convey produce to urban centers, retailers and consumers. Middlemen are frequently accused of exploitation but they do perform essential services with respect to storage, transportation, distribution and sometimes packaging. There are of course, studies that indicate that middlemen sometimes suffer losses and do not always make huge profits. Food crops unlike cash crops are not usually graded and when such crops as cowpeas and products such as gari are sold at long distances there is uncertainty as to the condition of the product. Also many perishable foods are not well packaged in the marketing chain or transported in suitable containers. There are also deficiencies in processing of food crops which improve their handling and marketing. Where processing is carried out, deficiencies in labelling and quality control still exist. Some of these problems in marketing can be solved through farmers' organizations which could handle marketing and eliminate middlemen. But research and development in food processing

should be given priority in order to even out availability, attain import substitution and value added.

Research

Research ensures continuous availability of technologies that are adapted, economically viable, ecologically sound and socially acceptable. Despite the crucial nature of research in agricultural development because of the need for technologies on a continuing basis to ensure sustained increase in food production there are inconsistencies and deficiencies in its organization and co-ordination. For example, the system has been bedevilled by frequent reorganizations which have in no way improved its effectiveness. Some of the major developments in our research organization include:

- 1893 Botanical Garden set up at Ikoyi, Lagos which encouraged plant introductions.
- 1899 Southern Department of Agriculture set up at Moor Plantation.
- 1921 Department of Agriculture formed with Incorporation of Southern and Northern departments.
- 1922 Clearcut policies in research laid down with emphasis on cash crops.
- 1924 Department of Veterinary Science set up at Vom.
- 1925 Department of Forestry Science set up at Sapoba, near Benin-City.
- 1938 Oil Palm Research Station set up at Benin, Bendel State.
- 1941 Department of Fisheries set up in Lagos.
- 1940–
- 1957 Inter-territorial Agricultural Research Organization set up in British West Africa consisting of:
 - West African Cocoa Research Institute (WACRI) 1941 at Fafo in Ghana.
 - West African Institute for Oil Research (WAIFOR) 1951 Benin City.
 - West African Institute for Rice Research (WAIFRR) 1948, Rokupr.
 - West African Stored Products Research Institute – (WASPRU), Lagos, 1948.
 - West African Fisheries Research Institute (WAFRI) Free-town, 1952.

- Regional Research Stations at Umudike, Samaru, Ibadan, 1954, Nigeria.
- 1962 Breakup of the British West African inter-territorial Research Organizations.
- 1959 Sir Frank Engledow Report on organization of research in Nigeria.
- 1970 National Council for Science and Technology (NCST) established to advice on Science policy but could not coordinate research of 4 institutes until 1976. Federal Dept. of Agricultural Research established. Number of research institutes increased to 20.
- 1970 Agricultural Research Council of Nigeria (ARCN) established.
- 1976 18 Agricultural research institutes came under the Agricultural Research Council of Nigeria (ARCN), other Councils, viz. Industrial Research Council (IRCN), Medical Research Council (MRCH) and Natural Sciences Research Council of Nigeria (NSRCN) all with respective research institutes except the NSRCN.
- 1977 National Science and Technology Development Agency (NSTDA) replaced NCST with Chief of Staff, Supreme Headquarters as chairman and with an Executive Secretary.
 - All research councils were abolished during 1977.
 - Three more research institutes (PRODA, NSPRI, and AERLS came under NSTDA.
- 1979 NSTDA, abolished and replaced by Federal Ministry of Science and Technology.
- 1984 Federal Ministry of Science and Technology combined with that of education to become Federal Ministry of Education Science and Technology (FMEST).

The above outline indicate that we passed through a period of isolated research departments during 1893–1941 to a period of British West African Interterritorial Research Organization with headquarters in one of the four anglophone countries of West Africa and substations in others from 1940 to 1957. During the latter period the Imperial government in London coordinated research in its West African territories. With the break-up of this organization, Nigeria established her own research institutes under the Federal Ministry of Agriculture and Natural Resources. No major change took place until after the civil war when the NCST was established in 1970

but it was not able to coordinate research because it did not take over research institutes until 1976. The NCST was represented in cabinet by the FMANR but until it took over all research councils and institutes in 1976 it could neither control the budget nor coordinate research effectively. The various councils (ARCN, MRCN, IRCH and NSRCN) were able to give technical guidance, coordinate and monitor activities of the respective Institutes under them. Since the abolition of the NCST in 1977 together with its research institutes until this date there has ceased to be a technically institutionalized advisory and monitoring mechanism. The main advantage the NSTDA had was that it was chaired by a powerful member of the Supreme Military Council in the person of the Chief of Staff Supreme Headquarters and enjoyed autonomy under an Executive Secretary. This had advantages and disadvantages. For example, there was low morale and disruption of research work with an unscheduled sudden switching and transfer of all directors of research institutes in 1978 by the then Executive Secretary. The Executive Secretary of NSTDA took the drastic action because of poor management of funds and other reasons. If the matter was handed by the NSTDA or referred to councils of a Technical Advisory Committee which were then non-existent, the action taken would have been different and very likely more appropriate. With the creation of a Ministry of Science and Technology everyone hoped that coordination and improvements would naturally come about more easily but so far no real changes materialized until the recent merger occurred.

Since 1976, the research institutes have been reviewed three times but most of the recommendations have so far not been implemented. Major inconsistencies which exist include

- Lack of overall umbrella for coordination of research in institutions of higher learning under the National University Commission (NUC) and the research institutes. Such a body will coordinate all basic research efforts and ensure equitable funding among institutions.
- Lack of a Scientific Research Council or Councils and no technical advisory council to advise, monitor and evaluate research programs from time to time.
- Funding of research institutes is grossly inadequate and erratic and not commensurate with the magnitude of the task.
- Poor management of research institutes, inadequate facilities and inability to ensure that research programs are based on priorities related to their mandates.

- Tendency of research institutes to be required to go into production to establish credibility with adverse effects on research effort when core research support is weak.

Local Availability of Supplies and Equipment

Traditional largely subsistence agriculture based on slash and burn clearance systems and long-term fallows requires the use of few equipment and manufactured inputs. In fact only matchete, axes and hoes may be required. An increasingly productive and efficient more commercialized agriculture that gives sustained yields over time requires increased use of a range of costly inputs such as fertilizers, soil amendments, herbicides, pesticides and associated equipment such as tractors, implements, threshers, sprayers etc. Their local availability can be achieved either through local manufacture or by importation. Such equipment could either be owned by farmers and their organizations or hired to them.

Various governments, in order to stimulate agricultural production in Nigeria, have made equipment available through tractor hiring units and subsidies for such items as fertilizers. Problems that have arisen included the fact that tractor hiring units rarely operated economically as public sector enterprises and there are constant breakdowns, lack of parts and poor servicing facilities. Moreover, with fragmentation of holdings, tractors often spend more time on movement from farm to farm than in actual performance of the few limited operations such as clearing and ploughing. The narrowness of the spectrum of operations that they can perform creates labour bottle-necks in weeding and their operations when their use increases the area farmed beyond what each farm family can normally handle. Making available tractors and equipment either by hiring units or improved terms of purchase devoid of high customs duties enhance their availability and use, but rarely so to the poor and rich alike. Unless there are increasingly a wider spectrum of operations that these equipment can perform and there are provisions for mechanics and drivers to own, operate and maintain them as private sector enterprises, the widespread and efficient use of such equipment may not be realized especially as long as traditional fallows with stumps dotted about the field are used. Considerable amount of local innovative research is required to make available a low cost range of machinery and appropriate technology to farmers.

As regards the use of fertilizers, and pesticides which are required and encouraged through subsidies, there has always been problems of over-

supply which ironically may still be associated with unavailability due to poor distribution facilities through government extension channels or sales across the border to earn foreign exchange. Moreover, now that farmers have learnt to use and need these inputs, the sudden elimination of subsidies under present unfavourable economic conditions and poverty among small holders will limit their use and reduce rate of growth in productivity. Furthermore, as long as most of these inputs are imported, there are problems of their not being always available at the right time and in adequate quantities in all locations where they are needed. Development of local capabilities for their production should be given priority but it is not always that fertilizer plants are economical to operate except where there are local raw materials and the volume of demand warrants it. The long and short of it is that although availability of equipment and supplies are increasingly needed to boost production, the prevailing facilities, policies, distribution practices and economics of use do not favour the majority of small farmers who produce the bulk of food and other agricultural products. In addition to these, we currently lack the capabilities, manpower, funds and commitment to conduct research on either appropriate technologies and integrated pest management strategies that minimize cost of their purchase to farmers, enhance savings in foreign exchange and ensure increased local availability of supplies. There must be established distribution mechanisms preferably operated by the private sector and there should be good roads and transport facilities to ensure success.

The most serious problem in availability of supplies and inconsistency relate to the fact that while it has taken two or more decades for a range of high yielding and disease resistant cultivars to be available and farmers have become interested in their growing them through demonstrations and the media, there are now no adequate facilities for their multiplication and distribution. The National Seed Service (NSS) currently lacks resources and capabilities to do the job and states do not have the facilities and capabilities to accomplish this. The recent formation of two seed companies in Nigeria is a welcome development but for sometime to come they will be concentrating only on hybrid varieties of maize while farmers also need other planting materials. Overall, it is not just the availability of one item that is of concern but that off a whole package on a regular basis, in sufficient amount and at the right time.

Production Incentives to Farmers

There is need for production incentives in terms of favourable pricing linked effectively with efficient marketing facilities if farming is to made attractive to farmers who have to work very hard, take risks and manage scarce resources to make farming profitable. Measures need to be taken to:

- minimize or eliminate inadequacies and inefficiency in marketing;
- regulate monopolies in markets through cooperative or other arrangements;
- ensure that government agencies that undertake to buy and sell produce at favourable and reasonable prices operate efficiently and reliably as not to disappoint farmers;
- use subsidies to stimulate farmers' use of inputs but this must be studied and applied in such a way that there are provisions for gradually phasing them out without disruptive effects;
- make necessary arrangements to ensure that supplies and equipment are available at prices that favour farmers making profit in their use (favourable price and cost of inputs is imperative);
- ensure that where price regulation is necessary enforcement and inspection must be provided for since legislation alone is effective.

In general number of inconsistencies in production incentives have been experienced in Nigeria not the least that of marketing boards, lack of regulation of those who make large profits on subsidized and duty-free equipment, inability of government to purchase produce at declared prices, fixing of prices that are non-remunerative, etc.

Transportation

Transportation facilities must be adequate for supply of inputs to farmers and farmers to convey produce to markets or consumers. There must be provisions made in transportation of agricultural products in such a way as to reduce losses in transportation through improved handling. Limited research has been done to reduce cost of perishables in Nigeria. Cost of performing these services need to be favourable and not deter farmers' efforts in production. Cost of transportation depends on distance of shipping, quantity conveyed at a time and means of conveyance. There is need for provision of adequate net-work of good all season roads that get to key strategic areas. At the present time in Nigeria that these are not only inadequate but they are usually not well constructed and maintained, there

should be facilities for conveyance and transportation for short and long distances with minimum losses. Overall, an adequate transportation system that functions effectively and efficiently is necessary. The major inconsistency here is that we aim at attaining self-sufficiency in food, but when we produce them large amounts do not get to consumers due to inadequacies in handling and transportation system. Middlemen wisely take advantage of this but when farmers get lower returns the overall effect is lack of incentive to increased production.

INCONSISTENCIES RELATED TO ACCELERATORS OF AGRICULTURAL DEVELOPMENT

These are already indicated above and as listed by Mosher (1966) they include (i) education and training of agricultural technicians and manpower for agribusiness, (ii) production credit, (iii) group action by farmers, (iv) improvement and expansion of agricultural land, and (v) national planning for agricultural development. Each of these could form a separate topic but only brief references will be made on some associated inconsistencies.

Education and Training

A dynamic educational policy and an efficient and comprehensive educational system is required to satisfy quantitatively, qualitatively and functionally Nigerians' manpower requirements in all relevant disciplines and at all levels necessary for innovative research in agriculture, extension services, policy formulation and planning, agribusiness support and services, teachers and managers. This requires good manpower adequate and timely planning, and effective staff development programs based on an integrated approach in manpower development for all linked elements that interact in agricultural development. It is not just enough to decree teaching agriculture in all schools. It is in fact more important to provide good courses in those subjects that lure students into agriculture or are pre-requisites to good performance in agriculture right from the primary school. Inconsistencies arise in education in relation to agricultural development in many areas but few examples will suffice:

- agriculture as an applied science requires production of adequate number of scientists, in all relevant disciplines, of high quality and at all levels. As long as we are still unable to achieve 60:40 ratio of science to humanities and the social sciences, we have li-

mitted chances of getting good students in agriculture in competition with medicine and other more attractive fields.

- research is crucial in technology development and it requires provision of good educational facilities to all in addition also existence of centers of excellence that give opportunities for training experts for innovative research involving reasonable balance between basic and applied sciences.
- manpower development is a long term proposition and yet the time lags in our educational planning, policy formulation, changes for improvement and actual project execution is so prolonged as to render all efforts ineffective.
- there is no adequate linkage of the educational system with agricultural research and service agencies.
- achievement of reasonable balance between theory and practice is vital in agricultural development but efforts to achieve these are half-hearted.
- it is well known that effectiveness in extension is related to number of methods of communication of results to farmers yet programs for special training and education of farmers are either lacking or inadequate.

Production Credit

That farmers lack credit for purchase of inputs, equipment and payment for services is well known. It is also well known that agricultural development banks have been established but there is a major inconsistency in the policies, procedures and regulations for obtaining credit favouring not the majority of farmers but fewer well-to-do ones.

Group Action by Farmers

A lot of constraints farmers face today can be surmounted through effective farmers organizations such as cooperatives for production sales transportation, storage and other functions. Although there is institutionalized agency to encourage this, the overall mechanism for encouraging and developing farmers's organizations remains weak. As long as this is so the budding large-scale farmers may exercise more influence over policies and governments than the majority of small holders. There is need for assistance to farmers in organizing, furnishing special materials, provision of technical and

managerial assistance and financial support to enhance strong farmers organizations (Mosher 1966).

Improving and Expanding Agricultural Land

This entails improving quality of land and expansion of area under cultivation. The major inconsistency here already indicated is that we are still rely mainly on expansion of area under cultivation despite increasing competing multiuse land use pressures. Most recent programs for increasing food and agricultural production give highest priority to land clearing sometimes freely or at subsidized rates. The irony of it is that often not up to 50% of cleared area is planted. Even where the cleared land is eventually cultivated, improper clearing and subsequent management render large areas of land unsuitable for production. Moreover, there is danger that the current landuse act if not well managed will benefit the rich at the expense of the majority of small holders.

National Planning for Agricultural Development

Inconsistencies related to this have been discussed but although it is observed that planning sometimes is less of a problem than execution, considerable amount of inconsistency can be eliminated by:

- improving reliability, scope and frequency of relevant data collection.
- ensuring that where necessary special research projects may be executed in order to lay a sound foundation for accurate data collection for planning purposes.
- developing comprehensive data bank for Nigeria.
- training and increased use of local talent.

INCONSISTENCIES IN ALTERNATIVE STRATEGIES FOR INCREASING AGRICULTURAL PRODUCTION

Eight of these have been listed in Appendix 2 and the problems of inconsistency of expansion of areas under production as the main thrust for increasing production as opposed to other alternative land saving strategies has been referred to. Other inconsistencies in this area include the fact that our current high import bills is not only a result of low productivity but also partly the result of escalating demand for convenience food resulting from high rates of urbanization, increased mobility, changes in status and role of women in society and household, increased affluence, western influ-

ence on the elite, etc. But priorities in research and resources in manpower, equipment and facilities allocated to food processing are grossly inadequate, Similarly, research support for formulation and enforcement of food and drug legislation and quality control need to ensure safety and promote import substitution are lacking. One measure taken by the Federal Government that provides opportunity for integration of several strategies for increasing food production is the establishment of river basin development authorities. There is no doubt that they constitute ecologically sound units for planning and integrated rural and watershed development. Inconsistencies arise in efforts to realise their full potentials through (1) public sector direct production, (2) adoption of more or less uniform strategy in their development throughout the country by construction of large-scale dams instead of relating them to ecological zones (for example, basins in the South require more rural restructuring and small watershed development than in the north), (3) crash program approach to their development instead of long term especially with (i) data are lacking or inadequate for planning, (ii) there are limitations in funds and executive capacity, and (iii) there are deficiencies in technologies for development of all areas.

Our agricultural development through increased production of farm animals has not taken full advantage of stratification of production systems in terms of ecological zone relative to the ease for breeding, fattening, etc. Aquatic resources have not been fully exploited and foreign fishing firms take better advantage of the Nigerian market than the Nigerian ones. Finally, there is a major inconsistency arising from neglect of the potentials in agroforestry due to competitive programming of the two sectors rather than integration.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The current food crisis, decline in agricultural export earnings and overall agricultural production is the result of deficiencies in policies planning, strategies and programs in agricultural development as a component of overall economic development of Nigeria. Failure to achieve rapid rates of growth in agriculture and food production is in no small measure due to inconsistencies and incompatibilities in provisions under each of the above agricultural development instruments in provisions under each of the above agricultural development instruments in relation to each other and among various instruments. Inconsistency is defined as lack of continuity in the adoption of certain principles of application of certain measures. It may also involve incompatibilities in the implementation of sequential or interacting elements

aimed at achieving the same objective. Similarly, there may be incompatibilities arising from steps taken under each instrument not being effectively linked to previous ones and anticipated future action. It is emphasized that antithetic to consistency is the fact that development calls for changes and transformations, consequently changes may be continuously made which should be regarded as consistent when necessitated by circumstances which if overlooked will result in appropriate mid-course corrections not being made in order to achieve the final objective.

Recommendations

The few recommendations made here are by no means exhaustive but for brevity they are limited to certain items that are regarded as crucial.

1. **As a result of the complex and multidisciplinary nature of agricultural production and the fact that agricultural development can only meaningfully be implemented as a component of overall economic development, a holistic and integrated approach must be adopted in shaping policies, planning, determining strategies, program formulation and management of execution if consistency is to be achieved and compatibility among sectors achieved.**
2. Political changes constitute a major cause of inconsistency in Nigeria agricultural development efforts. Frequency of political changes and constant instability are the result of several coups and even constitutional changes. Therefore, since even if accidental and non-constitutional political changes are eliminated constitutional ones must still occur, measures to be taken to ensure greater consistency since development is long-term and political changes must occur in one way or another should give highest priority to the appointment of food and agricultural development council of 6–10 specialists from relevant disciplines selected on the basis of their excellence and experience for five year-terms. They should be eligible for a second term of two years so as to allow staggered nomination or new members to replace those who have completed their terms. This will ensure continuity.

Note: (i) The council can commission special studies in food, nutrition and relevant areas of agricultural development to guide policies, planning, strategies and programs.

(ii) It should also develop guidelines for research and development activities and set up mechanisms for monitoring agricultural

development programs and advising on periodic changes where necessary.

(iii) There is usually a wide communication gap or gaps between scientists and politicians on the one hand and scientists and civil servants on the other. For improved communication there is need for a Technology Assessment Unit that periodically reviews and prepares documentation on potentials and implications of new technology for policy makers.

- 3 Research is a dynamic institutional instrument for understanding nature and developing technologies for surveying natural resources, policy formulation, planning, processing and utilization of resources in a rational and integrated manner. *Immediate action should be to set up a high powered technical advisory council that advises on overall national research policy, ensures coordination of research in universities and institutes, and takes measures to achieve reasonable balance between basic and applied research as may be reasonably discerned. Agricultural and other sectoral research councils should be restored to advise and coordinate research in relevant areas and ensure periodic evaluation of programmes in relation to priorities and mandates.*

Nigeria still boasts of the largest concentration of scientific manpower in many scientific disciplines and at all levels in Sub-saharan Africa but her research output in innovativeness, quality remains disappointing due to inadequate funding, deficiencies in facilities, management and incentives. Of these constraints the one of funding is most serious. *It is therefore recommended that funding of research institutes by statute should be done by Federal and State Governments, commercial firms and the Military even by government ministries such as those of Industry, Defence and Health. Apart from the recurrent expenditure the Federal Government should allocate annually about ₦50,000 to each institute so as to minimize disruptions caused by fluctuations in funding. State Governments should regularly contribute about 25% to research expenditure of research institutes in ecological zones in which they are located and are served. Commercial firms should contribute at least 1–2% of their annual profits to research institutes working on problems related to their industrial ventures.*

- 4 The most significant development in agricultural research and extension in the last one or two decades is farming systems research (FSR) which involves study and understanding of the farmers overall environment and production system as a basis for determining priorities in

research, constraints and strategies for development technologies and modifying existing systems to develop new ones that are economically viable, ecologically sound and socially acceptable. It also engenders farmers participation and feed-back to research station scientists on a continuous basis. Its adoption by the Federal Agricultural Coordinating Unit (FACU) in many development projects is a step in the right direction. *Consequently, it is recommended that we develop FSR capabilities at regional centers linked with Agricultural Extension and Research Liaison Services (AERLS) and ensure its effective and countrywide use.* Its effective use will also assist in determining extent of priorities to be allocated to small farms as compared to largescale farms. Since the NAFPP is so far the most successful agricultural development program for the majority of farmers that have adopted this approach, it is recommended that its experience be used to plan and execute agricultural development programs in the Fifth Development Plan with modifications for greater effectiveness where necessary.

5. Conflicts are rife in the operations of federal and state functionaries in agricultural development at state level especially where political parties in power were different at state and federal levels. Provisions should be made in future to ensure more effective harmonizing of efforts.
6. *There is need to comprehensively review our educational system and take measures to ensure relevance of subject matter, curriculum and methods of teaching to the priorities in agriculture and the natural sciences. Steps should also be taken to ensure earlier orientation of students towards agriculture, the natural sciences and mathematics. At the university level, special facilities or provisions must be made to enable students really spend the extra year added to the degree program for practical work.*
7. *A program on coordinated natural resources survey should be launched in all universities and conducted on a continuing basis.* This would be necessary in planning policies formulation, integrated rational management, processing and utilization of natural resources.
8. Reasonable balance should be struck between research and strategies aimed at increasing production on small farms as compared to large scale farms both of which are complimentary so as to avoid the latter that has more influence prospering at the expense of the former, especially as long as industrial development is at a level that will not

absorb large number of people who may be displaced from agriculture through increased industrialization.

These recommendations on efficiency of production and competition are by no means exhaustive but do give indications on major policy guidelines and strategies for minimizing inconsistencies in following a more stable path for rapid growth in agricultural productivity as a component of overall economic development.

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