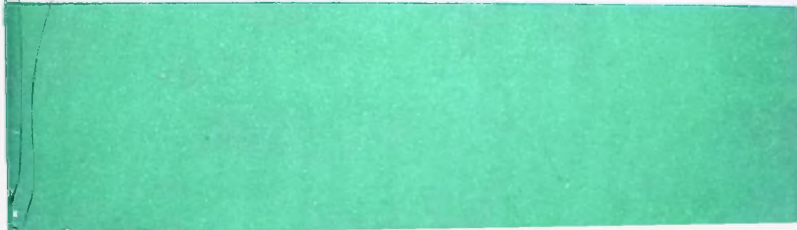


GR

**GREEN
REVOLUTION
INSURANCE AGAINST HUNGER**



INTRODUCTION

THE concept of the Green Revolution is to make Nigeria self-sufficient in basic food production, within five years. This is a task which the Federal Government is fully committed to accomplishing.

IN the last decade or so, the food situation in Nigeria, Africa, and the world, generally, has continuously deteriorated at an alarming rate. This crisis first hit Africa with the on-set of the Great Sahelian Drought in 1972. By 1974, it had assumed world-wide proportions.

IN November, 1974, the United Nations General Assembly convened the First World Food Conference in Rome. This resulted in the establishment of the International Fund for Agricultural Development. Ever since, the food crisis has persisted and grown worse, especially in Africa, due to the continuation of the droughts and the out-break of local conflicts and civil wars. In the final analysis, Africa now has the largest refugee population in the world.

NIGERIA is predominantly an agricultural country. About 80 per cent of her working population are engaged in the production of the country's major cash crops as well as food for local consumption. Unfortunately, most of these farmers are peasants who still stick to their old, traditional methods of farming, and depend largely on manual labour. As a result, the country's agricultural production continues to run appreciably below its potentials, while government resorts to importation of food items, thereby creating a situation which causes cost of living to leap at a disturbing rate.

THE only way out of this situation, therefore, is for Nigerians to feed themselves, rather than depend on the importation of food. The introduction of the Operation-Feed-the-Nation (OFN) programme by the military government of General Olusegun Obasanjo was aimed at this self reliance objective. President Shagari's Green Revolution programme, is a more radical approach in pursuance of this objective.

FOR it to really succeed, the farmers, who, incidentally, should be seen as the main participators, the scientific community, the manufacturers of agricultural chemical inputs and machinery, the banks and other private-sector institutions, have vital roles to play.

THIS publication is, however, aimed at providing some relevant information which should lead to a better understanding of the concept and actual implementation of the Green Revolution programme by the Federal Government

CONCEPT AND REALITIES OF THE GREEN REVOLUTION

FOOD is basic to human existence. Without it, man can hardly survive. This particularly poignant fact has survived the ages.

Nigeria is essentially an agricultural country. Before the emergence of oil in the economic scene, shortly after independence., 80% of her working population were engaged in the production of the major cash crops as well as food.

Most Nigerian farmers were peasants who produced food crops largely for home consumption for those in the immediate neighbourhood. It was usually after those needs had been satisfied that the extra was sent to the urban centres and the relatively industrialised areas as well as to the major cities, including Lagos where farming was and is still largely non-existent.

That was the true picture. Thus, agriculture was, therefore, a major source of employment in Nigeria. Consequently, it constituted the main stay of the country's economy, providing 60% of her exports.

Farming at that time, however, depended largely on manual labour. Mechanisation was limited, particularly with respect to tilling the soil. For an extremely fertile country like Nigeria, whose arable land is quite impressive in size, agricultural production was regrettably below normal. Poor production techniques, inadequate water supply and irrigation schemes, and inadequate use of fertilisers, all contributed to such low level of productivity.

Then came 1960, Nigeria became independent. There was a frightening drift of the rural population to the cities, either lured by the fascination of city life or in search of white-collar jobs. This soon created and still creates labour

shortage on the farmlands with the resultant decline in agricultural production.

There were other factors which precipitated the rapid decline in the country's agricultural output. These included lack of credit facilities, spoilage due to inadequate or non-existing storage facilities, and poor transportation system.

Added to these factors was the fact that with the eventual discovery of mineral oil, people became eager to seek other alternative sources of earning a living, such as from employment in petroleum exploration and burgeoning industries.

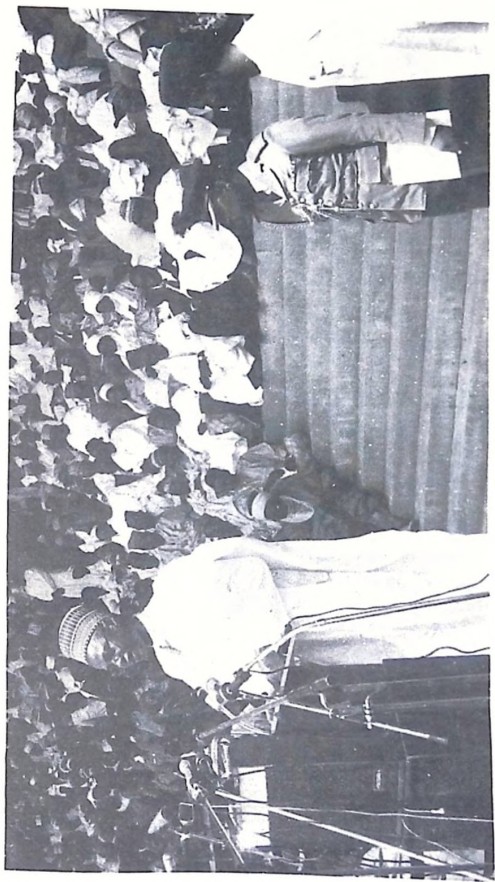
Within a span of ten years, therefore, agriculture had suffered such a decline that the country became obsessed by staggering food bills and rising inflation. It must, however, be stressed, at this stage, that no nation can survive and has ever survived, when its agricultural sector of the economy was neglected.

OPERATION FEED THE NATION (OFN)

IT soon became crucially important that the declining situation must be arrested. One of the tasks of the Government of the late General Murtala Muhammed, which incidentally was then the government of the day, immediately on assuming office in 1975 was to embark on some large-scale importation of food items to meet the country's immediate needs.

In addition, he introduced a number of fiscal and policy measures directed at increasing agricultural production, as well as imposed such restrictions, as price control, to check the increasing cost of living. All these measures had immediate and positive results. At least, they, among other things, made food items available at reasonable prices. But they had one unfortunate characteristic — they were merely stop-gap measures.

However, to reverse the unhealthy agricultural trend and, thus, fight inflation successfully, Government needed to



President Shagari declaring open the 1st National Agricultural Show held in Kaduna April 7 - 11, 1981, the show has become an annual affair in furtherance of the Green Revolution

embark on long-term measures. The country had to produce her own food.

In pursuance of this objective, therefore, the then Federal Military Government of General Olusegun Obasanjo introduced the 'Operation Feed the Nation' (OFN) programme.

EARLY SUCCESS

THE OFN succeeded in awakening the interest of many Nigerians in agriculture. It gave political backing and prestige to the field. As a result, while many schools can, today, be seen engaged in one form of agriculture or the other and even on some commercial scale, many retired public officers now engage in farming as an occupation.

REASONS FOR EVENTUAL FAILURE

UNFORTUNATELY, the programme was not geared to meeting the needs of the 'small farmer' as should have been the case. It was directed at the wrong target. The National and State Committees, formed to see to the smooth execution and success of the programme, failed to include farmers from the grass roots. Besides, the entire people who participated in the programme were relatively small.

There were still other factors which contributed to the very limited success of the programme. The then Administration which initiated it, by virtue of its being military and therefore non-democratic, planned the programme without necessarily considering the yearnings of the masses. This, naturally resulted in the half-hearted involvement and ineffective mobilization of the masses

And so, the OFN failed in increasing the nation's food production significantly.

THE GREEN REVOLUTION PROGRAMME

THE succeeding civilian Government of President Shehu Shagari came and also emphasized the need for national self-sufficiency in food production. Even quite early in the day, from as far back as during the electioneering campaigns preparatory to the return of the country to civilian rule, the realisation of this need had been there and was used as one of the major campaign issues

The need for Nigerians to feed themselves, rather than depend on importation of food, has been a priority of the Administration articulated through the concept of the Green Revolution. As a matter of fact, the President, Alhaji Shehu Shagari, has repeatedly emphasized his Administration's determination to make Nigeria a nation self-sufficient in food production. In his Welcome address to the 11th meeting of the National Council on Agriculture in Lagos in January, 1980, he explained that the food policy of his Administration was "to ensure that every Nigerian, irrespective of his social status, has enough balanced food to eat." He even went further to stress that "placing the right emphasis on agriculture will also ensure that the rural population will have an opportunity of increasing their incomes from agriculture, and thus helping to arrest the rural urban migration which has already created social problems in the urban centres."

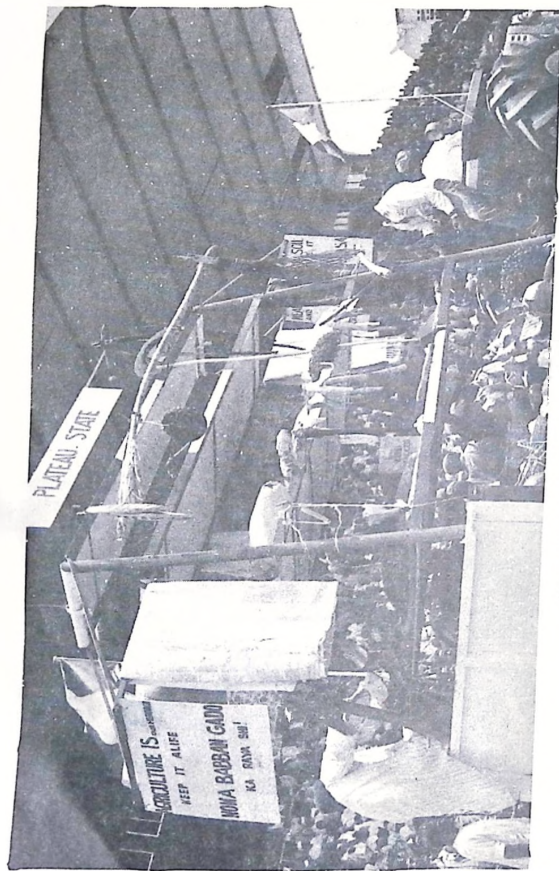
LAUNCHING OF THE PROGRAMME

IT was, therefore, in fulfilment of this pledge that Government launched the "Green Revolution" programme on April 14, 1980. The term "Green Revolution," in essence, means agricultural revolution. Or, better still, a call for an accelerated increase in agricultural production through a radical modernisation of the country's agricultural production — which can be achieved by removing all the known constraints to increased production, the provision of needed inputs, such as improved seeds, fertilisers, pesticides, herbicides, irrigation water, agricultural credits, appropriate mechanisation, agro-service centres, improved markets, improved pricing policy, and the provision of other incentives for farming.

The word "revolution" indicates a total and radical change, overthrowing original conditions and interrupting the process of continuity. The Green Revolution is, therefore, simply a strategy for accelerated agricultural development and the improvement of the welfare of the people in the rural areas, involving the intensification of research extension and training of all involved, including the farmers.

CONCEPT OF THE PROGRAMME

THE concept of Green Revolution was first developed in Mexico, where some Rockefeller scientists, in collaboration



Plateau State float at the National Agric. Show.

with the Mexican Government, developed very high yielding varieties of, firstly, wheat, and, later, maize — which out-yielded many times the traditional varieties, and thus revolutionized the Mexican agriculture as well as that of other countries in Latin America, and other parts of the world growing these crops.

For centuries, until some 15 years ago, the typical wheat and rice varieties grown in the sub-tropical and tropics were tall with long drooping leaves. They were developed in such a way to service the prevailing conditions of inadequate pest and water control, and non-usage of fertilizers. As a result, although their yields were dependable, yet they were low.

Therefore, Dr. Norman Borlaug, the leader of the team of Rockefeller scientists, decided to use Japanese dwarf varieties to breed dwarf lines of wheat which possessed short-stiff straws and, consequently, early maturing. Besides, they were responsive to nitrogen fertilizers. The result, therefore, was the breeding of the famous dwarf Mexican varieties that later formed the basis of the "Green Revolution" in Asia, especially India and Pakistan.

This successful experiment in Latin America was later passed on to the International Rice Research Institute in the Phillipines, using short-stemmed varieties from Taiwan in the breeding programme. The "Miracle Rice," the eventual product of this experiment, revolutionized rice production not only in the Phillipines but also in the rest of South East Asia.

In India, the rapid increase in the yield of wheat and rice, through this same experiment, was dubbed "Green Revolution." It succeeded in demonstrating, in a very forceful way, how the removal of yielding constraints such as absence of fertilizer, pest control, water control, and proper management, could dramatically increase food production and save the lives of millions of people who might have died of starvation.

Dr. Borlaug was later awarded the Nobel Prize in recognition of his contribution to peace and humanity, and is usually referred to as the father of the Green Revolution.

HISTORY

THERE is, therefore, nothing really new about the "Green Revolution" concept. Many revolutions in agriculture have taken place in history. The first recorded agricultural revolution took place as ages back as from 5,000 to 4,000 B.C. — a period when many inhabitants of the new world, the middle East and China, shifted from the life of nomadic wandering, dependent upon hunting and communal gathering, to a relatively sedentary life in small villages supported by the cultivation of domestic plants and animals.

The adverse consequences of this revolution, however, was a rapid increase in population — the increase being sixteen fold. Between 4,000 B.C. and 1798 A.D. the rate had even jumped to ten fold.

However, during the 19th Century, vast areas of land came under cultivation throughout the world. At the turn of the century, the application of modern scientific equipment to agricultural production in the advanced countries of the world marked the beginning of the current era of agricultural development. Modern inputs, new fertilizers, herbicides, insecticides, and mechanization were substituted for traditional inputs of land and labour. The spread of this phenomenon from the developed to the developing countries of the world then came to be referred to as the "Green Revolution." The introduction of modern agricultural technology in the advanced countries during the first half of the 20th Century widened the gap in agricultural productivity between the developed and the developing world.

WORLD CONVICTION

THE world is undoubtedly now convinced that technological innovations can be developed in most developing countries to raise the yields of the traditional crops very substantially, and revolutionize their agriculture, just as was done in respect of wheat, maize and rice in Latin America and South East Asia. Hence, many of the food deficit countries are currently embarking on a green revolution programme.

BROAD VIEW

THE Green Revolution, in its broadest sense, includes not only the high-yielding varieties of crops but also many aspects of agricultural development, such as fisheries, livestock, forestry, agro-industries, etc. It is designed to revolutionize agriculture and, consequently, the living condition of the people in the rural areas through increasing the production of food, providing employment in the rural areas, and reducing the problems of urbanization by slowing down the rural migration.

NIGERIAN ANGLE

IN the Nigerian context, the Green Revolution is five-pronged: improved and modernized small-scale farming by individuals; large-scale agriculture by co-operatives, private companies and individuals; intensive and mechanized large-scale agriculture by Government intervention; methodical food conservation and distribution and systematic rural development.

GREEN REVOLUTION COUNCIL

THE topmost executive body for administering the Green Revolution programme is the Green Revolution Council with the President himself as Chairman. Other members include the Ministers of Agriculture & Rural Development, Science & Technology, Water Resources, Industry, Finance and National Planning, and the Chairman and the Vice-Chairman of the National Committee on Green Revolution. Decisions taken at the Council meetings are passed on to the appropriate Ministries for execution.

Below the Council, there is a small action Committee of the council made up of Ministers of Agriculture and Rural Development (Chairman), Science and Technology, Water Resources and Industry and the Chairman of the National Committee on Green Revolution.

NATIONAL COMMITTEE ON GREEN REVOLUTION
RESPONSIBLE to the Council is a National Committee on Green Revolution made up of a Chairman, a Vice-Chairman, one member from each state of the Federation and the Permanent Secretaries of Ministries that have relations with Agriculture as well as the Permanent Secretaries of the Ministries of Commerce and of Information and the Vice-Chancellors of the Universities of Ibadan, Ahmadu Bello and the University of Nigeria, Nsukka. The National Committee on Green Revolution is advisory in function and meets at least once a quarter or as often as necessary, and its advice is communicated to the Council for consideration and the issue of necessary directives as may be necessary to the appropriate executing Ministries. Special task forces are set up in each state made up of State and Federal staff and local farmers to execute programmes of action.

ACTION PROGRAMME

THE first action of the National Committee after it was launched by Mr. President in May, 1980 was to review all the programmes and projects of all relevant Federal Ministries and Departments in the current five-year development plan to ensure that they were geared to the achievement of the objectives of the Green Revolution. The Committee then went through the contents of the Idachaba World Bank Strategies Report, making recommendations as appropriate to the Council. It later commissioned a review of all the agricultural research institutes in the country with a view to identifying the constraints to their effective functioning and gearing them to the objectives of the Green Revolution.

Studies of the rice industry, fisheries and livestock in Nigeria were also commissioned and completed. The rice study led to the preparation of an action programme for the expansion of rice cultivation in all the States and Local Government areas of the country which was approved by the Council, and for which the President approved a special allocation of about ₦103.6 million. In this programme, farmers are to be organised into cooperative groups farming some 100 hectares of land and to be provided with tractors, inputs of fertilizers, herbicides and improved seeds at subsidized prices. A similar action programme for boosting maize

production is being drawn up. While action programmes are similarly to be prepared from the fisheries and livestock reports, when approved, for boosting the production of these products as well.

PROOF OF REALITY

THE obviously pertinent question now is: to what extent has the Green Revolution struggled so far to be a reality? Needless to say that the present Administration is fully committed to the distillation of the Green Revolution concept. In effect, it is determined to broaden and intensify efforts geared towards giving the highest possible support in financial terms to farmers as an incentive in the agricultural sector.

Early in the year 1980, Government commissioned a team of World Bank and Nigerian Consultants to outline a strategy for the programme. The team's report provided, inter alia, an objective assessment of Nigeria's supply and demand for food for the period 1981-1985. It was based on the usual factors of population growth, estimated at 2.5% per annum, and real income growth at 20% per annum, and showed that while Nigeria's gross supply of all food items was increasing at the rate of 3.5% per annum, her domestic consumption, within the same period, was growing as well at the rate of 10% per annum.

FOOD IMPORT STATISTICS

ACCORDING to trade statistics, in 1976, Nigeria imported 1.1 million metric tons of crops and crop products, and 0.24 million metric tons of livestock products. Expressed in terms of caloric contribution, the latter represented 6.8% of the gross supply. It was then projected that, in 1980, imports of food would exceed 2.68 million metric tons of crop products and 0.48 million tons of livestock products representing 15% of the gross calorie supply.

From this projection, it would then appear that if the rate of calorie supply from domestic sources continued to increase at the rate of 1% per annum, Nigeria's import could, by 1985,

increase to more than 5.270 million metric tons, representing 24% of the gross supply. If indeed Nigeria were to close the food gap, she would need, for her crop and crop products, a production growth rate of 6.6% per annum, while livestock production would need to increase at the rate of 11% per annum. The combined growth rate needed would be about 6.75% per annum. This would be almost impossible to achieve since the maximum growth rate she can expect is 4%, as judged by the development in other countries where 4% per annum is normal.

FOOD PRICE TREND

AN examination of the details of Nigeria's food imports by the team of consultants confirmed that her dietary composition has since changed considerably. Wheat and rice have replaced some of her traditional staples in roughly equal proportions. Also, although domestic prices have been rising at the rate of about 25% per annum while international prices have remained firm since 1970, production has generally failed to respond to the rapid rise in the food prices which the demand growth has generated. The food sector has also been subject to competition from overseas. Bread and rice that used to be luxury foods have become relatively cheaper to the order of 20 to 25%. If this trend is allowed to continue, the consultants' report, it will ruin all efforts being made to intensify agriculture over the next five years. Hence it is important to control Nigeria's food import very strictly.

The present Administration is, therefore, committed during the current National Development Plan to doing this. The question of course, is how?

DIRECT GOVERNMENT PRODUCTION POLICY

ONE of the most effective ways of keeping the urge to import food at bay is through Government's participation in direct production which will come mainly by way of equity holding in purely commercial joint ventures with the private sector.

The following fiscal incentives are provided by Government for companies wishing to go into large-scale agricultural ventures:

- (a) Income tax relief to pioneer enterprise
- (b) Duty free importation of farm machinery
- (c) Additional investment allowance of 10 per cent provision for carrying forward of losses.

FOREIGN INVESTORS

ANOTHER equally effective way is by transferring agricultural production and processing from Schedules II to III of the Nigerian Enterprises Promotion Act, which means that foreigners now own up to 60 per cent of equity in any agricultural enterprise. Already, more than 30 organisations in the United States have indicated their willingness to invest in Nigeria's agriculture. Not long ago, the Vice President, Dr. Alex Ekwueme, inaugurated an 11-member Nigerian-American Joint Agricultural Consultative Committee at the State House as one of the important steps being taken by Government towards the development of agriculture in Nigeria.

NIGERIAN AGRICULTURAL AND CO-OPERATIVE BANK LTD.

THE Nigerian Agricultural & Cooperative Bank Ltd. (NACB) is an institution that finances all aspects of agricultural production, as well as storage, processing and distribution. To revitalise this important institution, Government has, under the current Plan period, substantially increased its lending capacity in order to help solve the problem of short and medium-term finance in the sector.

AGRICULTURAL CREDIT GUARANTEE SCHEME

THIS is another institution established by Government to fund the agricultural sector. This is to induce commercial and merchant banks to make loans available to individuals or corporate bodies with reduced interest rates of 3.5 per cent for investment in the sector.

AGRICULTURAL INPUTS

TO obtain higher levels of production, there must be the provision of improved agricultural inputs to the farmers. To achieve this objective, the Federal Government embarked on certain programmes, namely, the National Accelerated

Food Production Programme, and the Seed Multiplication Programme, which will provide seeds and seedlings to farmers. Besides, fertilizers and pesticides are also provided at subsidised prices. Through these programmes also, grazing reserves are provided for the provision of pasture and water, as well as the supply of feeds, breeding stock, fishing gears and nets. Efforts are made to improve storage and distribution facilities in the bid to minimize wastage. A network of roads is under construction to give and, in some cases, improve access to farm service centres, to enable easy transportation of inputs and farm produce.

AGRICULTURAL MECHANISATION

AS a further boost to the Green Revolution efforts, agricultural mechanization is geared towards reducing the tedium of farm operations and the unattractiveness of farming as an occupation. In this regard, the Federal Government has set up a tractor-hiring scheme whereby it purchases tractors, complete with a full range of attachments annually, for resale to farmers at subsidised prices or for hire to those farmers who cannot reasonably be expected individually to buy any, due to the high cost. Government also purchases for resale to farmers, simple hand-operated farm equipments and animal-driven ones, which can be utilized with a minimum of training. In addition, Government encourages the establishment of private companies to handle the tractor-hiring scheme and associated land-clearing activities.

INTEGRATED RURAL DEVELOPMENT

THE Green Revolution does not intend to treat agricultural production in isolation. It also hopes to improve on the social amenities in the rural areas through the provision of infrastructural facilities like feeder roads, water supply, electricity, educational and health facilities to help improve the quality of rural life. Under this integrated rural development scheme, Government is making effort to provide these necessary infrastructure.

DEVELOPMENT OF WATER RESOURCES

THERE are eleven River Basin Development Authorities in the country, among which are the Sokoto River Basin Development Authority, Lake Chad River Basin Development Authority, and Benin River Basin Development Authority. In order to revitalise the various River Basin Authorities, Government has provided the sum of ₦294 million for a number of activities, including the provision of irrigation facilities, involving construction of dams and boreholes, to help irrigate farms and farmlands.

INTEGRATED AGRICULTURAL DEVELOPMENT PROJECTS

CENTRAL to the Green Revolution programme are the integrated Agricultural Development Projects (ADP) which were started in 1975 and partially financed by the World Bank. The central theme of these projects is the transfer of already developed crop and mechanical technologies to the majority of the farmers by extension workers who are based at village farm service centres. In addition, distribution of inputs, such as fertilizers also takes place through the farm centres.



Development of fisheries for protein for the people is a major goal of the Green Revolution Programme.

The projects are located at the following major towns: Funtua (Kaduna State), Gombe (Bauchi State), Gusau (Sokoto State) Ayangba (Benue State) Lafia (Plateau State) Bida (Niger State) Ilorin (Kwara State) Ekiti Akoko (Ondo State) and Oyo North (Oyo State). On completion, they are projected to cover 41% of Nigeria's small holder population. Meanwhile, government is spending over 65 million Naira this year (1982) largely in form of grants to state governments for the implementation of these projects.

FUNCTIONS OF THE AUTHORITIES

THESE river basin development authorities have been created to exploit the country's major rivers for agricultural production. They are expected to undertake schemes for the development of underground water resources, control of floods and erosion, and for water-shed management. They are also meant to develop irrigation schemes for the production of crops and livestock, and to lease the irrigated land to farmers or recognised associations. It is expected that the Authorities would develop about 243,000 hectares during the current plan period. The area currently under cultivation amounts to 43,000 hectares and is devoted to the production of rice, wheat, maize, sorghum and vegetables. It is expected that this will increase to 85,000 hectares during the 1982 cropping season. In addition, the national borehole programme has already sunk 102 out of the projected 1,500 boreholes.

NEED FOR ENSURING SOCIAL JUSTICE

THE components of the Green Revolution technology, apart from introducing high yielding varieties of crops and livestock and good management, are fertilizers, pesticides, herbicides, irrigation water, mechanization, credit, marketing etc. Since it is, however, fashionable today in planning for economic development to think in terms of social justice in a community such as the Nigerian community where majority of the farmers are small holders, it is important to ensure that the small holder is made the centre piece of the Green Revolution programme, and this is precisely what Government is doing.

NATIONAL RICE PRODUCTION PROGRAMME

In 1981, a national rice production programme was launched. Under this programme, over 1,000 rice farmers and 240 technicians have been trained. Production inputs comprising 460 tractors and implements, 3,000 sprayers, 666 irrigation pumps, 40 rice mills, 20 mobile workshops, and large quantities of improved seeds have been made available to farmers. This year (1982), there are plans to expand the programme to cover maize, guinea corn, and millet.

This programme is, of course, in addition to the numerous agricultural programmes which government is presenting in various parts of the country. For example in the effort to rehabilitate cash crops, government has succeeded in planting 10,000 hectares of oil palm estates, and assisted small-scale farmers with the establishment of 33,000 hectares of oil palm. Similarly, under the World Bank assisted projects, 88,000 hectares have been planted with cocoa in Bendel, Ogun, Ondo and Oyo States. Besides, the groundnut pyramids which disappeared for several years have since reappeared in all the groundnut producing states.

DEVELOPMENT OF FISHERIES AND LIVESTOCK

THERE'S no gainsaying that the daily protein intake of most Nigerians is still quite low. To ameliorate this situation, Government has given considerable attention to the development of fisheries and livestock.

In the case of fisheries, Government has distributed in the last year large quantities of essential inputs such as mechanized crafts, gear and outboard motors to fishermen. Already 22 out of the 45 trawlers ordered from Poland have been delivered and are being distributed among the maritime states of the Federation. To promote artisanal and inshore fisheries development, construction work has commenced in earnest on three fishing terminals in the Cross River, Ondo and Rivers states.

Similarly, Government has given a great deal of support to livestock farmers through the establishment of livestock service centres, grazing reserves, and the provision of livestock feeds. Government has already approved the purchase of 100,000 tonnes of locally produced maize in order to help the farmers and to stimulate local production of this



Rice harvester at work



Rice thresher

crop. It is intended to sell this maize to feed millers at subsidized prices, again, in order to stimulate poultry production. Against this background, it is projected that Nigeria would be self-sufficient in maize by 1984.

However, a more detailed analytical study of the development of livestock in the Green Revolution programme touches on a considerably wide spectrum of economic interests. These include the production and growth maintenance of dairy, beef, sheep, goats, piggery and poultry.

LIVESTOCK DEVELOPMENT PROGRAMME

THERE is a livestock development programme being currently executed by the Livestock Department of the Federal Ministry of Agriculture. This involves policy formulation and coordination on matters relating to production, disease control, veterinary public health and animal by-product utilisation.

All these efforts are expected to provide adequate supply of animal protein to the masses as well as boost the national economy. On investigation¹, it is discovered that the current animal-protein consumption per capita is only 15g as against an estimated 35g. Worse still, part of this supply comes from imported meat and milk.

CATTLE

A further close study of the slaughter-cattle statistics shows that in 1970 about 40% of slaughter cattle were female and immature. This situation worsened during the drought years to about 60% in 1975, indicating not only stagnation but depletion of the national herd. The level of female/immature slaughter-cattle has since decreased from 39% in 1976 to 20% in 1977. In 1978, there were still greater signs of improvement.

DAIRY

The dairy sector has not improved much. The present consumption of milk in the country is about 10kg per capita per year, with local supply contributing less than 50%.



Birds at a poultry farm

There are, already plans to improve this situation. One of these is the provision of heavy equipment for use in land clearance and construction of dairy centres and access roads.

Sheep and goats constitute about 36% of the total livestock value in the country. They are also getting a fair share of Government's efforts to enhance growth and productivity.

POULTRY

The poultry sector has contributed significantly to the nation's animal-protein supply. Although commercial production has since increased by about 25%, the demand for poultry meat and eggs still exceeds supply. The bulk of day-old chicks is imported at the rate of about five million per annum. Nearly all the feed ingredients — maize and protein concentrates and poultry equipment — are also imported.

SWINE

SWINE production is largely traditional. Commercial production in this area has made minimal impact.

SPECIAL LIVESTOCK DEVELOPMENT PROJECT

AS part of the development programme, the Federal Government, in association with the International Bank for Reconstruction and Development (IBRD), is executing a special livestock development project aimed at increasing beef production in the country through commercialisation of ranching, and provision of credit and technical assistance to private livestock producers.

The project is already making impact in the various project areas. There is a Livestock Project Unit (LPU), within the Federal Livestock Department, which is responsible for carrying out the technical supervision of the project activities.

The project is designed to establish and improve seven breeding ranches at Borno, Darazo, Upper Ogun, Akunnu, Ogboro, Oke Ako and Meko. The main objective of these ranches is to produce breeding stock for sale to private farmers, and also to engage in seasonal fattening of steers. Development in this area is based on pasture improvement, water development and adequate provision of the 'Ndama' cattle for ranches down South and, 'Zebu' cattle for ranches up North.

The ranches are operational under the Western Livestock Company, the Borno Livestock Company, and the Bauchi Livestock Company. At present, the Western Livestock Company is being regularly supplied with 1,000 Ndama cattle annually, for distribution to private ranchers to obtain the necessary breeding stock.

FATTENING RANCHES

THE project undertakes the development of Mokwa and Manchok ranches as finishing operations for feeder steers. This is on a six-month cycle, and based on improved pasture, modern methods of cattle husbandry and range management. These ranches are readily accessible. They enjoy adequate rainfall and acceptable soil-type and topography. The project is again already yielding appreciable results in this area. The Mokwa Ranch, for instance, is stocked up to 3,000 steers for fattening and has an abattoir processing, while the rehabilitation of the Manchok Ranch, has already commenced.

PRIVATE RANCHES

THE project assists private cattle farmers in establishing and improving breeding and fattening operations through the provision of credit and technical services. It prepares and supervises plans for on-ranch infrastructural development and management. The major constraint in the implementation of these plans is, perhaps, in being able to satisfy the conditions laid down for procuring titles of land which require certificates of occupancy. This is currently being looked after, through the employment of the services of a surveyor who surveys applicants' land. This, notwithstanding, state governments have been requested to acquire land for long-term lease to suitable pastoralists on individual or group basis, to enable them qualify for credit grant within the development programme.

CREDIT GRANT

THE project provides credit to small holders, butchers and cattle dealers, and educates on economic and efficient fattening methods. As a result, many participating small holders have since acquired husbandry skills which they find very useful in keeping breeding animals.

LOAN SCHEME

THE Livestock Project Unit operates a loan scheme, on behalf of the Nigerian Agricultural and Cooperative Bank Limited (NACB), which it disburses through supplies of feeder steers, feeds and veterinary materials. About 900 loan transactions have been carried out with individual farmers in Borno, Gongola, Bauchi and Kaduna States. The scheme is funded by Commercial banks and state governments in Kaduna and Bauchi States.

GRAZING RESERVES

WITHIN the project plans, new grazing reserves in Borno, Bauchi, Gongola and Kaduna States will be established to permit efficient utilisation of natural grassland by traditional graziers. There are also plans to provide fire-breaks, roads, water supply, stock-handling facilities, accommodation, transport, dipping facilities and drugs. At present, a grazing area of 500,000 hectares has been acquired and developed at Udubo, Sorau, Kachia, Gujba, Kukar-Jangari.

GRAZING RESERVE PROGRAMME

A close study of the land-use statistics for the years 1951, 1976 and 1981, shows that the area made available for livestock grazing has changed radically within the last thirty years. The area of uncultivated bush or grazing land, which provides most of the feed for livestock, has decreased from 67 per cent in 1951 to 50 per cent in 1976, and is projected to fall to 39 per cent in 1986.

In 1976, grazing pressure was almost at balance with the carrying capacity of the range. By 1986, the situation is likely to become very serious as this will lead to soil erosion, and intensification of desertification.

A grazing reserve programme is, therefore, planned to arrest the situation. This is designed to reserve and develop rangeland, and increase forage production through pasture improvement and management. It will also assist the nomadic graziers to secure a settled life much more quickly and easily. Infrastructural development of the grazing reserves will include water development, pasture establishment, disease control and marketing facilities. The reserves will be made into models of extension units for training, input distribution and technical services. Over 2 million hectares have been acquired and developed in ten Northern States for this purpose.

RE-ALLOCATION OF THE NATIONAL HERD

IT is part of the livestock development project to secure a proper national distribution of livestock by destocking the overgrazed Sudan Zone, and utilising the well-watered pastures of the Guinea and Savanna Zones. Adequate investments are made to offset cost of curative measures for trypanosomiasis and create incentives in the form of supplementary feed supply in areas below latitude 12 degrees. Efforts are made to provide adequate assistance to all the nineteen states to get them involved, in varying degrees, in this area. In addition, there are plans to establish livestock service centres outside the grazing reserves, all in the same determination to promote livestock development.

REGIONAL PASTURE IMPROVEMENT PROGRAMME

THE Livestock Project Unit also runs a Regional Pasture Improvement programme which aims at bridging the gap between universities/research institutes and State Ministries of Agriculture by assessing pasture and seed adaptability, establishment, maintenance and utilisation in the field. It is also geared towards establishing seed production centres in order to provide seeds for distribution to states and eventually farmers, as well as stimulating awareness and interest in pasture improvement at the state-ministry and farmer levels.

REGIONAL PASTURE IMPROVEMENT UNITS

THE Unit also plans to establish five regional pasture improvement units in various ecological zones in the country. Each unit will have facilities for seed processing and storage, and a demonstration unit of 200-300 kilometer radius.

The Kofare and Heipang units in Gongola and Plateau States are already operational. The unit at Abejoko in Benue State will be established this year. The field pasture trails involving the testing of wide variety of tropical grass and legumes with various rates of fertilizers have been established over several wide areas of the country, ranging from the semi-arid to the sub-humid.

ACHIEVEMENTS

IT is remarkable to note that the Livestock Project Unit has recorded a number of far-reaching achievements in its various pasture trials. For instance, it is now clear that the

Stylosanthes Guayanesis grass is suitable for the Middle-Belt area. Verano Stylo (Stylosanthes Hemata) and Townsville Stylo (Stylosanthes Humids), on the other hand, are better grown in the drier and semi-arid zones. Signal grass (Brachiaria Decumbens) is noted for good performance in subhumid and middle-belt zones with low-soil fertility. Buffel grass grows better in granitic soils than in acidic areas, while Gamba grass thrives well in semi-arid regions with poor soil fertility.



Cattle grazing

With all these achievements already brought to play in the management of the country's livestock industry, there is every optimism that in the very near future the nation's livestock yields will register a remarkable leap in growth and enjoy a boom. This, in turn, is bound to boost Federal Government's efforts to make the Green Revolution programme a huge success. For the man-in-the-street, there will then be enough meat with the right quality of animal-protein to go round.

CRITICISMS OF THE PROGRAMME

THE Green Revolution Programme has been criticised for various reasons. One of them is, of course, on the basis of the fact that it is likely to widen the disparities in income between the small and large farmers. This is, however, possible where the structural setting in which the programme takes place is either not right for bringing about social justice or is not designed to involve the majority of the farmers, and so a privileged class is created in the society which alone enjoys the benefits of the programme. But Government has taken adequate precaution in making the smallholders, who constitute the majority of our farmers, the centre piece of the programme.



A maize and cassava farm



A pineapple plantation

Green Revolution can bring about, and has done in a number of countries, unprecedented increases in food production through the use of modern science and technology; but in countries strongly committed to the principles of social justice and mass welfare, it is necessary to ensure that the small farmers are not left out of participation in the programme. This means that there must be even distribution of productive resources of land, capital and other inputs. The wisdom of the promulgation of the Land Use Decree and other decrees favouring rural development and the development of the small farmers in Nigeria should now be obvious. In Pakistan those who possessed extensive resources of land and water derived the greatest benefit from the Green Revolution. The same applies to India where some 25% of the population are reported to be landless.

There is a considerable literature on the effects of the spread of the Green Revolution on the income between the large and the small farmer. The most common hypothesis is that the large farmers benefit more than the small farmers, because the technology requires the use of fertilizer, pesticides, credit and, in some instances, machinery on a scale beyond the reach of the small farmer. It is also often said that large farmers are more likely to have favourable access to surface irrigation or the resources needed to be invested in making boreholes for water.

The evidences relevant to this hypothesis are mixed, and a close study reveals that many small farmers were able to adopt the Green Revolution technology and to reap the benefit of increased income from it, but the large farmers did relatively better, hence in general, the relative income position of the small farmer deteriorated, but his absolute income increased while the country achieved the increased production it desired, thus making an overall economic gain.

Since the disparity complained about, as already pointed out, is brought about by the disparity in the resources available to the two groups for participating in the Green Revolution programme, many countries including Nigeria, short of going a hundred per cent socialists, are endeavouring to correct this by creating programmes which are beneficial to small farmers, ensuring availability of needed resources at subsidized prices, ensuring credit and other inputs not only at subsidized prices, but making them readily available close to

the small farmers. The Nationalization of Commercial Banks, the introduction of Agricultural Credit Guarantee Schemes, the establishment of agro-service centres, land reform, and a large number of other programmes are designed to help the small farmers' participation in the Nigerian Green Revolution. The River Basins Development Authority's agricultural schemes are all designed for the benefit of the small farmers. Besides, in Nigeria there are very few large farmers to speak about.

INCOME CHANGES

IT also needs to be pointed out that in the context of Nigeria, if one might judge by what is happening in the other sectors of the economy, changes in absolute income are probably more important than changes in the relative income which Government can take care of by adopting suitable fiscal and other measures. Also with the virile and forward looking population such as Nigeria has, small farmers farming economic small holdings will be happy with an increase in their absolute income and gradually promote themselves into medium size and later into larger size farmers. This is already happening amongst the Nigerian trader and industrialist many of whom start in a small way due to the size of the resources available to them, and gradually promote themselves into high rungs of the business ladder.

PLANNED ECONOMIC DEVELOPMENT

THERE is equally the need to ameliorate the conditions of poor people through planned economic development. More rapid growth of the economy, greater diffusion of enterprise and of the ownership of the means of production, increasing productivity of the weaker unit and widening opportunities of productive work and employment to the common man and particularly the less privileged sections of the society — these measures have to be carefully thought out in a number of different context and coordinated into effective integrated programmes.

MISCONCEPTIONS

The other equally common criticism stems from the fear that despite Government priority attention given to the programme, there is still no glaring improvement in the prices of food in the markets. This batch of critics believe that by now there should be abundant food and so, they feel disenchanted when these results fail to come through in the form and with the speed they had anticipated.

SIGNS OF SUCCESS

BUT the fact still remains, that, against all these misconceptions and disillusion, signs of the success of the Green Revolution programme had begun to appear in the markets from as far back as early November, 1981. These were mainly rice produced by one of the river basin development authorities, the Ogun-Oshun River Basin Development Authority. The rice harvests have already been on sale in various parts of the country, mainly at Abeokuta, Ibadan and Itoikin (Lagos State).

A sample of the rice indicates that it is of every good quality. It comes in two grades — the high grade and the competitive grade — with prices, reasonably low.

The question of self-sufficiency in rice production is a particularly pleasant one for Nigerians because of the recent dimension rice consumption has taken in the country, and even more so because of the efforts of those people whose concerted objective is to rip off the consumer. The problem in fact took such a proportion that the President had to appoint a Presidential Task Force on the importation and distribution of rice, under the chairmanship of Alhaji Umaru Dikko, the Honourable Federal Minister of Transport.

In addition to rice, poultry farming has also increased tremendously. Relatively low initial investment has encouraged even those with moderate means to maintain a poultry in their backyard where they raise eggs, largely, and some broilers. But the relatively high cost of poultry feed also affects the cost of poultry products.

Government has therefore encouraged local production of the feed, through such efforts as the establishment of agricultural loans. The credit facilities also extend to other activities which will enhance agricultural productivity generally. It was largely in this respect that the Nigerian Agricultural and Co-operative Bank was formed — to provide loans and credit facilities to farmers.

Acknowledgement:

Dr. T.S.B. Aribisala

Chief Consultant, Green Revolution Secretariat

*Designed and Published by the Federal Department of Information,
(Domestic Publicity Division) Ikoyi Road, Lagos, and printed by King &
George (Nig.) Ltd., 3A Airport Road, Maryland, Ikeja. July 1982:
100,000.*

