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ROOT AND SOYABEAN CROPS: AS BASIC FOOD IN NIGERIA

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The Chairman,
Respected Farmers,
Brilliant Agricultural Scientists,
Honourable Invited Guests,
Distinguished Ladies and Gentlemen.

With gratitude, I am highly honoured and privileged to be invited by the Organising Committee for the 7th International Farm Management Congress to deliver a Paper to this great international audience. I would start my address by congratulating the President, the Secretary, the executive council of IFMA and Organising Committee of this Congress for successfully piloting the boat of the administration of IFMA in every country in the world.

The contents of my paper is purely based on my personal experience on my farm through constant dealing with the Agricultural Extension Workers, Soil Scientists, Economists, Livestock, Forestry, Poultry, Horticulture, Co-operative, Loan and Credit Facilities and Marketing. Similarly, my participation in national and international Congress, Agricultural Shows, Conferences, Workshops and Trade Fairs.

Nigeria, like other developing countries in the world, is a naturally agricultural country. Nigeria had her independence economically through her agricultural products like cocoa, palm kernel, palm oil, millet, groundnut, rubber, tobacco, timber, sheer-butter, to mention a few. But unfortunately, agriculture was totally neglected because of the discovery of petroleum oil and Nigeria later became importer of agricultural products, including food crops.

The present federal military administration in Nigeria, under the patriotic, competent leadership of General Ibrahim Badamosi Babangida, CRF, FSS, Mni, President and Commander-in-Chief of the armed forces of the Federal Republic of Nigeria, would for ever be remembered by generations yet unborn in Nigeria and foreign countries for restoring the lost glory of agriculture and rural development of villages through the effective implementation of the activities of the Federal Ministry of Agriculture, Water Resources and Rural Development; Directorate of Food, Road and Rural Infrastructure; Directorate of Employment; MANSER; Agricultural Insurance Scheme and more importantly, the National Small Farmers' Credit Scheme. All these are aimed at more food production, better cash crops and foreign exchange earning for Nigeria. This implementation is carried out at the remotest village in Nigeria with the provision of standard roads, markets, borehole water, health care centres, storage facilities and other basic amenities.

Now, to my topic, I have chosen Root and Soyabean crops as basic food crops in Nigeria because they are widely grown and mostly eaten as subsistence staple food in tropical and sub-tropical Africa. The root crops in Africa consist of cassava, yam, sweet potato and cocoyam. They are the major

source of energy for over two hundred million people in Africa. These crops are massively adopted to diverse soils and environmental conditions, according to the traditional farming systems. In view of the traditional nature of these crops, there was no scientific attention on research improvement and government policy on them.

Although Cassava (*Manihot esculenta* Crantz) is very popular in Nigeria, yet it is little or unknown outside its areas of Nigeria cultivation and consumption. Cassava is a crop that is most sympathetic with the farmer because it gives some yield for its grower, no matter under what risks in farming. Since it was introduced to Nigeria from South America centuries ago, it has performed well under high drought tolerance, pests, diseases and weeds. Cassava as starchy root crop can be kept for storage in the ground for one year or more before harvesting.

As at today in Nigeria, cassava, as human and animal nutrition, and in industrial utilization for textiles, medical food, textiles and paper packaging cannot be overmentioned. This utilization led to a national meeting of cassava growers, cassava researchers and experienced Agricultural Extension Experts from the National Seeds Service (NSS) of the Federal Department of Agriculture at the International Institute of Tropical Agriculture on the 6th of April 1987 and later to the inauguration of the Nigerian Cassava Growers' Association by the Chairman, Directorate of Food, Road and Rural Infrastructures on the 24th September, 1987, with the following objectives:-

- i. Acquaint cassava farmers with the potential of high yielding varieties and provide information on the technology and agronomy needed for adoption.

- ii. Assist farmers to secure credit and production inputs for cassava production.
- iii. Promote and represent the national interest of cassava growers in relation to production, processing, utilization and marketing.
- iv. Advise and liaise with the government, national and state agencies and institution in relation to policies and priorities for cassava research, production, processing and marketing.

Cassava Production, Processing and Storage

Cassava is grown widely in Nigeria as a major staple food crop in every State of the federation. The small farmers feed the nation, and as such, the Nigerian small farmers grow cassava in the traditional methods. Only few large scale farmers and companies grow cassava on large acreage on the mechanised technology. It is now clearly shown that cassava is expanding its influence in Nigeria, from being only a subsistence crop. It is now an income generating job for the farmers and commercial industries. The planting period for cassava is between March and September of each year or as soon as rainfall is steady. For good yield, very healthy cassava variety must be planted. It has the qualities to intercrop with other food crops like maize, cowpea, bean and vegetables.

Unlike other root crops, cassava tubers are easily perishable and can only be kept for few days. The quick deterioration of cassava is due to microbial infection and physiological factors resulting in loss of moisture. So, the surest methods to store and preserve cassava is to leave the plant in the ground until it is needed for harvesting either for

direct sale or processing. The commonest methods of storing cassava is by burying the tubers under the ground. While at times, cassava are piled in heaps and watered daily early in the morning to keep fresh for a period of one week. At any rate, the Nigerian Stored Product Research Institute has suitably developed two low-cost cassava storage technologies for the small scale farmers, while there is another method by storing fresh cassava in trenches by the large scale farmers or processors.

Traditional cassava processing can be grouped under two classes:

- (a) Processing technology based on dried cassava products with or without fermentation. These are "Lafun" (i.e. fermented cassava flour) cassava noodles (Abacha) and unfermented cassava flour.
- (b) The other class is based on purely fermented products which are gari and fufu. Cassava starch is very important industrial raw material. Women are mostly concerned with processing and marketing.

The IITA-UNICEF programme on household food security introduces the modern processing technology of cassava products. These include white cassava pudding, cassava dessert, cassava balls, steamed cassava cake and cassava put to mention a few.

There are many varieties of cassava planting materials with different names and ecological zones. Such as TMS 30555, U/1421 TMS 30211 and U/41044 are suitable for rainforest. NR/7706, TMS 30572 are for rainforest and forest savannah. In each case, the average yields vary from 44 to 50 tons per hectare. The varieties are tolerant to diseases and pests.

Cassava can grow well on most Nigerian farmlands except on water logged lands. Though planting can be done on flat farmlands, but for better yields and accurate planting, it is better on ridges. Stakes can be dipped in insecticides against cassava mealybug and other cassava diseases. Plant 25cm cuttings and 1 metre apart on the top of the ridges.

Weeding can be successfully controlled by human labour with hand weeding by pulling and hoeing. Weeding must be done 30 to 40 days after planting and later about 65 days. While the modern way is the application of herbicides like Diuron or Primextra.

The fertilizer application depends on the fertility of the soil. 15 - 15. 15. NPK fertilizer is most suitable. It is advisable to seek the expert advice of the Agricultural Extension Workers.

Besides human and animal consumption of cassava products, there are still many alternative uses of cassava products in Nigeria. These are:-

- i. Best, high quality for alcohol in the breweries, petrochemicals, pharmaceuticals, perfuming industries and beverages.
- ii. Glues and starch production in the textile industries on modern cassava processing technology. I strongly appeal to the Royal Kingdom of Thailand to establish joint enterprises with Nigeria to produce from cassava raw materials, such products like tapioca starch, pearl, pulp, tapioca meal, tapioca chips and tapioca pelles.

Soyabeans Production: Soyabean is one of the oldest crops in Nigeria but not until recently that the production and utilization of soyabean was accorded deserved recognition in view of its many uses and potentials as human and animal food source and as raw material for processing industries. Such qualities include nutritional agronomic and economic value of the crop. As new food crop, its position in the African continent to provide protein, viable source of vitamins, minerals and beverages. It maintains the fertility of the soil, it has early maturity for harvesting between 100 to 120 days.

Soyabean (*Glycine-mat-L. Menil.*) was first introduced into Nigeria in 1908. Attempts were made at Soyabeans trial at the Moor Plantation, Ibadan, in Oyo State and Samaru in Kaduna State but there were no encouraging results. Historically, mention must be made daily of Chief (Dr.) T.S.B. Aribisala (The father of Nigerian Agriculture) for his laudable efforts to establish the trials and planting of soyabeans at Kulende about 20 kilometres from the Kwara State capital, Ilorin.

Soyabean is a rotational crop for maize, millet, sorghum and other cereal crops. The maturity period of the crop is between 120 to 190 days when it will be ready for harvesting. The planting time must be regulated to ensure that the harvesting period does not fall into the raining season, for good quality seeds. Such qualities include nutritional, agronomic and economic value of Soyabeans. As new food crop, its position in Africa in general and Nigeria in particular is to provide protein, viable source of vitamin, minerals and beverage. It maintains the fertility of the soil, while it has early maturity for harvesting between 100 to 120 days.

Soyabean is sure to be grown as wonder crop in Nigeria in the next centuries because of its qualities as food and cash crop. Soyabean has over 40% protein, and 20% oil.

The Nigerian Soyabean Association comprises growers, processors, industrialists, private and public interested sectors to produce and protect soyabean in Nigeria.

As a rotational crop, soyabean can be intercropped with maize, sorghum, millet and other cereal crops.

2. Storage:- Storage facilities are the most constant and commonest problem facing food production in Nigeria. The farmers are potentially up to the task by producing enough food, but 80% of the production wastes due to lack of storage facilities. At the peak of harvesting, we have enough to export but 'few months' later, we face food production problems due to lack of storage facilities. Therefore, soyabean should be stored in sacks and be packed in a well ventilated barn.

3. Agricultural Credit Facilities:- In view of the numerous purposes for which soyabean is utilised, I pray this honourable house to use its good offices to include and follow it up in the communities at the end of the conference that the Federal and State governments and commercial banks give agricultural credit facilities to soyabean growers as they grant to cocoa, maize, groundnut, millet and palm produce farmers.

4. Processing: Many farmers still find it very difficult to thresh their farm soyabean products. Soyabean scientists should please find and produce for sale to the farmers very simply operated and movable machines for threshing and processing soyabeans.

5. Marketing: The unsteady and unregulated price of soyabeans give the farmers much concern. There must be a national and reasonable price for the farmers to sell. As at the present selling price, the cost of production is by far higher than the selling price. The manufacturing companies and other processors must buy at very profitable prices from the farmers. Cost of transportation from the farms to the markets constitute much problems.

6. Pests and Diseases: If not sprayed at the early stages, the pod-sucking insects and other diseases. To avoid bush fowls attack, the farm of soyabean must be kept clean while trapping must also be maintained.

7. Drought: Many at times, there is no rain and soyabeans require water. Similarly too, much rain destroy or drastically reduce the yields during flowering. As such, farmers loose greatly. Ladies and gentlemen, I will strongly appeal to you all to implore the Federal Military Government to make it a point of priority before 1992 to see that irrigation system is established at every farmland throughout the federation of Nigeria, including the new federal capital of Abuja. Frankly speaking, in view of the unsteady rainfall in the southern part of Nigeria in the last five years, has proved and demanded the provision of irrigation system in all southern farmlands.

8. Population Census of Nigerian Farmers: 'Small farmers feed the Nation' was the theme of the 7th World Food Day of 1987. Nigeria in particular feeds her over 100,000,000 inhabitants who are peasant farmers. The present Federal Military Administration will for ever be remembered by generations yet unborn if the number of all categories of Nigerian farmers is known and registered before the Babangida administration hands over power to the civilian government in 1992.

With the accurate registration of practising farmers in Nigeria at village level, the governments in the federation will be able to provide sufficient money in the annual budgets for agriculture. It will also assist the Directorate of Food, Road and Rural Infrastructure to plan and execute her functions successfully for the provision of good roads, markets, water, electricity, health centres, agro-service centres, transportation, rural banking, research centres and mass registration of Farmers' Multipurpose Cooperation Societies.

Research Institutes:- Without doubt, Ladies and gentlemen, you will agree with me to acknowledge the great roles the International Institute of Agricultural Research and Training (I.I.A.R.&T.) Moor Plantation, Ibadan, the National Root Research Institute, Umudike, the Oyo State M.A.H.R., Agricultural Extension Research Institute, ABU Zaria, the Nigeria Horticultural Research Institute (NIHORT), Eleyele, Ibadan, Agricultural Management Training Institute (ARMTI), Ilorin and many others which you know more than I do, are playing. These research institutes have contributed largely by providing improved high yielding planting materials to the farmers in the rural areas. It must be mentioned here that the Federal Government, the State Governments, Manufacturers, Processors, Commercial Banks and firms must kindly provide sufficient funds to finance these great research institutes to provide and deliver modern agricultural inputs to the farmers at village level.

The Research Institutes have much to contribute to improve the country's economy through agricultural development. Such will include the construction of low cost hoes, cutlasses, harvesters, planters, processing food machines, dryers and locally made storage facilities. We can conveniently make use

of the Steel Rolling Industries at Osogbo and Ajaokuta. Also, the petroleum products at Cross River, Bendel and River States will be of great advantage.

Agricultural Produce Marketing in Nigeria:- Thanks to the World body and Nigeria in particular for choosing the theme of 1987 World Food Day as "Small Farmers Feed the Nation". Over 99% of the agricultural products and processing come from millions of small farmers at the village level throughout Nigeria with all categories of agricultural products.

The middlemen and women traders meet the farmers all over the rural areas and buy very cheaply from them and sell at exorbitant prices to the consumers. Whereas, the small scale farmers labour day and night for months before producing the products right from the time of land clearing, farm mechanisation, planting, fertilization, risks of drought, flood, erosion, plant diseases and unpredicted natural disasters for marketing. But the small farmers are the losers.

In view of the above, the Federal and State Governments should buy from the farmers at very profitable prices, for the cost of production and sell to the public consumers at subsidised prices.

For export products, the Federal and State Governments should provide licensed buying agents with credit facilities in order to enable them give advance and reasonable money to the farmers. By so doing, the question of smuggling agricultural products will be reduced, if not totally removed.

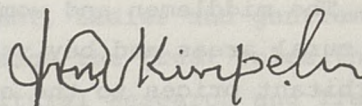
Finally, distinguished ladies and gentlemen, I strongly appeal to this honourable international congress to find lasting

solution to large production, processing, storage and marketing of soyabeans at world market level.

Once again, I thank the President, the international executive body and the organising committee for the chance giving to me to address you while I am very much appreciative of your rapt attention to receive my address.

Wishing you all very successful deliberations and a happy and safe journey back to your respective homes. Amen.

Thank you all.



CHIEF MODUPE AKINPELU
NIGERIAN AGRO-INDUSTRIAL FARMER.