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Fruit and Vegetable Crop Production in Nigeria: The Gains, Challenges and The Way Forward

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Abstract
The major fruits produced in Nigeria include mango, pineapple, plantain/banana, citrus, guava, pawpaw, while vegetables include onion, tomato, okra, pepper, amaranthus, carrot, melon, Corchorus olitorus (ewedu), Hibiscus sabdariffa (sobo), Adansonia digtata (baobab leaves) etc. In Nigeria, enormous quantities of fruits and vegetables are produced and staggering figures are sometimes given as estimated annual production .Fruits and vegetables play a very important role in the nutrition and health especially as they contain substances which regulate or stimulate digestion, act as laxatives or diuretics, pectins and phenoic compounds which play a part in regulating the pH of the intestines. Fruits and vegetables also contribute to the income of both the rural and urban dweller. The industrial potential of many fruits and vegetables available in Nigeria is enormous. What Nigerians need to do is embark on massive production of these fruits and vegetables not only for their high nutritive value but for enhancing the establishment of many processing industries. The development of their industrial uses will stimulate large scale production of the crops and enhanced diversification of entrepreneur to site processing plants in the rural areas which will improve the quality of life of the rural population and reduce the rate of rural-urban migration Fruits and vegetable production in Nigeria is a serious business because it provides a means of livelihood for some people and also play an important role in the improvement of the health of Nigerians

1.0 Introduction

Nigeria is a large country with very large population with the non-farming population concentrated in our big cities all over the country. Feeding the 160 million people in Nigeria today and at the same time conserving our environment is a great challenge facing our farmers and the Government. Thus, sustainable intensification as being practiced by our integrated Vegetable Farmers and Dealers in Imo State is generally a way forward and an alternative to industrialized farming. Although this sustainable intensification of vegetable and fruits production may not be a panacea itself it offers a useful approach to improving vegetable food availability given our situation.

Food and Agricultural Organisation (FAO, 1992) estimated that about 790 million people are chronically undernourished in the developing regions of the world. Specifically, daily food consumption consists of mainly cereals, roots and tubers. This poor feeding habit predisposes the people to infections and such disease as typhoid fever, heart, liver and kidney disease due to poor body defense mechanisms.

Fruits and vegetables play a very important role in the nutrition and health (Hulme, 1971; Nagy and Shaw, 1980) especially as they contain substances which regulate or stimulate digestion, act as laxatives or diuretics, pectins and phenoic compounds which play a part in regulating the pH of the intestines.

Fruits and vegetables also contribute to the income of both the rural and urban dwellers. Horticultural crop production creates jobs. On average it provides twice the amount of employment per hectare of production compared to cereal crop production (Ali et al., 2002). The move from cereal production towards high-value horticulture crops is an important contributor to employment opportunities in developing countries (Joshi et al., 2003).

In spite of various initiatives aimed at improving the horticultural sub-sector, the sector still remains relatively under-developed. The horticultural sub-sector also reflects the problems in the agricultural sub-sector. These problems include inadequate knowledge and technology of production, insufficient planting materials, land tenure, poor extension services and insufficient post harvest facilities (Babatola, 2004). Horticultural crop production in Nigeria has been hampered by the policy and fiscal constraints of the governments. It has received very little attention in the national perspective plan for agricultural development (Oseni, 2004). In addition, Nigeria has only one research institute, National Horticultural Research Institute (NIHORT) established in 1975 for all horticultural crops. Horticultural crop farming is associated with negative outcomes stemming from

imperfect predictable biological, climatic and price variables. Those variables include natural adversities e.g. pest and diseases, weather factors not within the control of agricultural producers and adverse fluctuations in both input and output prices. In the light of the foregoing, this study examines challenges and gains of fruit and vegetable farming in Nigeria.

2.0 Fruits and vegetables Crop production in Nigeria: An overview

Major fruits produced in Nigeria include mango, pineapple, plantain/banana, citrus, guava, pawpaw, while vegetables include onion, tomato, okra, pepper, amaranthus, carrot, melon, Corchorus olitorus (ewedu), Hibiscus sabdariffa (sobo), Adansonia digtata (baobab leaves). In Nigeria, enormous quantities of fruits and vegetables are produced and staggering figures are sometimes given as estimated annual production. For example, figures like 3.8 million tonnes of onions, 6 million tonnes of tomatoes, 15 million tonnes of plantain and 35 million tonnes of citrus have been quoted as annual production levels for some fruits and vegetables, which are really large quantities of food crops (Oyeniran, 1988; Erinle 1989). In spite of the enormous potentials of most of our local fruits and vegetables for industrial growth and development, very few large scale fruit and vegetable processing industries abound in Nigeria. Besides, the number of small and medium scale fruit processing plants in the country neither watches the size and structure of the country nor project the potentialities of the various and varieties of fruit and vegetables grown in the country. According to Asoegwu (1989), surveys show that the some horticultural crops or their derivatives form the main raw materials for most of the fruits and vegetables processing industries in Nigeria. These fruits include citrus, pineapple, mango and plantain/banana, while the vegetables include tomatoes, pepper, and melon. Yet the number of fruits and vegetables identified with useful industrial potential are handful. Also, aside, solving the problems of shortages and malnutrition, postharvest conservation and processing, the establishment of industries dealing with fruits and vegetables will stimulate production, open new opportunities for investment, improve rural income and result in better quality food (Adeyemi and Ogazi, 1983). The industrial potential of many fruits and vegetables available in Nigeria is enormous. What Nigerians need to do is embark on massive production of these fruits and vegetables not only for their high nutritive value but for enhancing the establishment of many processing industries. The development of their industrial uses will stimulate large scale production of the crops and enhanced diversification of entrepreneur to site processing plants in the rural areas which will improve the quality of life of the rural population and reduce the rate of rural-urban.

3.0 Gains of fruit and vegetable production in Nigeria

3.1 Eradicate extreme hunger and poverty

Fruits and vegetables generate more jobs per hectare, on-farm and off-farm, than staple based agricultural enterprises (Ali et al., 2002). This benefits farmers and landless laborers in both rural and urban areas. Value addition to fruits and vegetables generates further employment in the associated agri-businesses and further down the commodity chain from the producer to the consumer. Fruits and vegetables can generate higher profits than staple crops, especially when land is relatively scarce and labor is abundant (Cock and Voss, 2004; Gabre-Madhin and Hagglade, 2003; Minot and Ngigi, 2004; Subramanian et al., 2000). The value of fruits and vegetables per unit area is significantly higher than the value of the cereal crops. Although the costs of inputs such as labor can be higher, the profits are higher and the income thus generated can be used for many different purposes in terms of eradication of hunger and affording access to education and health care. Over two billion people suffer from micronutrient deficiencies through poor diets (UN/SCN, 2004). Fruits and vegetables are the most appealing and affordable sources of these micronutrients. Diet improvement increases a person's productivity, reduces health care related costs and therefore raises the productivity and incomes of the poor.

3.2 Achieve universal primary education

Micronutrient deficiencies impair cognitive and psychomotor skills, particularly in young children. These deficiencies can be alleviated through eating a balanced diet, rich in vegetables and fruits. With these improved, micronutrient-rich diets, children's cognitive and psychomotor skills are enhanced. Children who learn more and do well in school are more likely to want to stay in school and their parents are more likely to see the financial benefits of supporting their children's education (Haddad et al., 2002). Increased education also enhances the ability of the new generation of farmers to adopt more advanced technologies and crop management techniques.

3.3 Promote gender equality and empower women

Fruits and vegetables production, in particular, provides women with economic opportunities. Women are the principal producers of most horticultural crops in developing countries and are predominantly involved in the

value-addition activities from production to marketing. Targeting women in agricultural technology dissemination can have a greater impact on poverty than targeting men. The enhanced social and economic status of women, for example achieved through horticultural activities, leads to greater household food and nutrition security (IFPRI, 2005). In addition to the financial benefits of horticultural production, increasing women's access to vegetables and fruits for themselves and their families, will improve their health and work performance, thereby contributing to higher incomes. The sale of garden surplus is often a major source of income for rural women, and largely used for crucial family needs.

3.4 Health benefits

3.41 Reduce child mortality

Malnutrition is one of the major causes of, or is a significant contributing factor to, child mortality in developing countries. The link between horticulture and child mortality is indirect, but important. The absence of essential micronutrients exacerbates poor children's vulnerability to disease. Improving access to vegetables and fruits in their diets reduces mortality and morbidity of infants and children under five years old, particularly in rural areas (von Braun et al., 2004). Improving diets of women of child-bearing age and specifically pregnant women, reduces infant mortality and may reduce maternal transmission of HIV/AIDS to infants.

3.42 Improve maternal health

Maternal health depends on having achieved food security during girlhood as well as a diet rich in micronutrients during conception, pregnancy and the first few months after childbirth (von Braun et al., 2004). The health of women before conception directly impacts their health during pregnancy and child birth. The majority of pregnant women in developing countries suffer from anemia and other micronutrient deficiencies. This affects both their productivity during pregnancy and can lead to complications for the fetus during and after childbirth. Horticulture can benefit maternal health directly by improving the quality of women's diets. Vegetables and fruits are the most appropriate sources of micronutrients in the diets of these women, and are critical in regions where vegetarian diets predominate.

3.43Combat HIV/AIDS, malaria and other chronic diseases

Healthy, well-nourished people are able to resist many infectious diseases and have better resources to be able to fight infections. The human body's immune system relies on a balanced diet, rich in micronutrients, to be effective. Diets rich in vegetables and fruits bolster the body's immune system, helping it to resist HIV/AIDS, malaria, diarrhea, tuberculosis and many other infectious diseases (FAO/ILSI, 1997). A balanced diet, rich in micronutrients, is likely to reduce the number of chronic infections, prevent some infections and help the body to combat the severe infectious diseases which are common in developing countries and which are the leading causes of adult and childhood mortality. Fruits and vegetables are also considered by FAO and WHO as the primary nutritional tools to prevent non-communicable and micronutrient deficiency related diseases (WHO-FAO, 2005). Diabetes type 2, obesity and certain cardiovascular diseases and cancers can be significantly reduced via increased consumption of fruits and vegetables (WHO, 2003).

3.5 Pharmaceutical properties of fruits and vegetables

The potential of the Nigerian flora as a veritable source for pharmaceuticals and other therapeutic materials have been emphasized (Gbile and Adesina, 1986). Medicine constitutes one of the many resources of the forest on which the health of the average African population depended since the time of creation. Fruits and vegetables have usually served as the repository of healing materials and have been acknowledged to be generally safe without or with minimum side effects (Gbile and Adesina, 1986). Fruits and vegetables have usually constituted the main repository of drugs and many have been known not to pose any threat to human life. Twenty eight (28) medicinally important leafy vegetables and their therapeutic uses have been documented (Ayodele, 1996) as well as list of fruits with medicinally properties have also been documented (). Emphasis has been mainly on the leaves of the plants since these are usually consumed. Other parts of the plants such as stem, seeds, fruits and flowers in some cases are also useful medicinally. The family Compositae/Asteraceae has the highest recorded number of plants (21%) followed by the Cucurbitaceae (14%) and Malvaceae and Solanaceae (11%). Sixty eight (68%) percent of the documented vegetables are cultivated, 11% are usually obtained in the wild while 21% are either cultivated or obtained from the wild. Table 1 shows the diverse medicinal uses of the plants

3.6 Ensure environmental sustainability

Legume vegetable crops increase soil fertility through atmospheric nitrogen fixation. Leguminous vegetables integrated into cereal-based cropping systems in rotation or as part of a mixed-cropping system enrich the soil

and can break plant disease life cycles. Perennial tree crops can conserve and protect the soil in hilly and high rainfall regions.

Disease-resistant varieties, mixed cropping and the use of integrated pest management (IPM) technologies reduce pesticide use. Understanding the concepts of low-input agriculture allows maximum outputs with minimum inputs (Moustier et al., 2003). This can even include promotion

of 'organic' practices for **niche market trade.** Micro-irrigation technology permits efficient use of water, allowing the water to be delivered to the point it is required with minimal evaporative losses. This is particularly important where water supplies are scarce. Through fertigation, plant nutrients can be safely and economically delivered through irrigation systems. High value horticultural crops produce more profit per unit of water used, compared to most traditional crops and cropping systems.

3.7 New Jobs and Economic Opportunities

Horticultural crop production creates jobs. On average it provides twice the amount of employment per hectare of production compared to cereal crop production (Ali et al., 2002). The move from cereal production towards high-value horticulture crops is an important contributor to employment opportunities in developing countries (Joshi et al., 2003). The horticultural commodity chain is also longer and more complex than the cereal crop one and as a result job opportunities are more abundant (Temple, 2001). Women have the most to benefit from the increasing importance of horticulture in rural economies. Women, in general, play a much more significant role in horticultural crop production compared to starchy staple crops. Throughout the developing countries of Africa, women play a dominant role in the production of horticultural crops and cultivate more than half of the total smallholdings. Besides creating jobs on the farm, the horticultural sector also generates off-farm employment, especially for women. This is the case for export and value-added processing industries, which are important sectors of the economy of Nigeria. Since horticultural production is very labor-intensive, landless laborers also benefit from the new employment opportunities created by horticultural crop production. These jobs usually provide more income than jobs obtained by the laborers in most other sectors (Weinberger and Genova, 2005; Weinberger and Lumpkin, 2005).

3.8 Higher Incomes and Stronger Rural Economies

Horticultural crop production provides new and profitable sources of income for farmers. The production of horticultural crops can be especially important for small-scale farmers since these crops are well suited to smallholdings and family enterprises (Serageldin, 2004) and are often adaptable to urban areas and small plot gardens (Smith et al., 2004). Horticultural crops have a comparative advantage over cereal crops when land is scarce and labor is abundant, which is often the case in developing countries. Studies from the developing countries of Asia and Africa consistently show that farmers engaged in the production of fruits and vegetables earn higher net farm incomes than farmers engaged in cereal production alone (Abedullah et al., 2002; Cock and Voss, 2004; Francisco, 2004; Hau et al., 2002). Horticultural production contributes to the overall growth of markets and agri-businesses in rural economies. Studies show that the agro-industrialization process has been faster for nontraditional products such as fruits and vegetables (Escobal et al., 2000; FAO, 1997).

In many African countries, export horticulture is providing opportunities in an otherwise poor agriculture sector (Dolan et al., 1999).

3.9 Improved Food Security and Nutrition

All of the hungry and many of the overweight are afflicted with micronutrient deficiency (lack of vitamins and minerals). Over two billion people, the vast majority of whom are women and children, suffer from micronutrient deficiencies (UN/SCN, 2004; Gardner and Halwell, 2000). Horticultural crops can play a vital role in solving this global micronutrient crisis. Vegetables and fruits are the most sustainable and affordable sources of micronutrients in diets (UN, 2004). Healthy diets improve the learning capacity of children and the productivity of workers (Weinberger, 2004). ln contrast, micronutrient-deficient diets lead to reduced mental and physical development, poor performance in school, loss of productivity in the workplace, and the likelihood of poverty in future generations (Haddad et al., 2002), Vitamin A deficiency alone weakens the immune system of 40% of children in developing countries (UN, 2004). This deficiency increases a child's risk of severe illness and death from infectious diseases, which are the leading causes of death in developing countries. Vitamin A deficiency contributes to higher rates of anemia as well as morbidity from common childhood infections such as respiratory and diarrheal diseases (Sommer and West, 1996), measles (West, 2000) and malaria (Shankar et al., 1999). Deficiencies of vitamin A and other micronutrients may increase the likelihood of HIV/AIDS transmission from mother to child and hasten the progression of the disease in infected persons (Fawzi et al.,

2002; Semba et al., 1994). Iron deficiency affects at least 2 billion, and perhaps up to 3.5 billion people. Shortage of iron in the diet causes reduced productivity, which results in economic losses of billions of dollars globally (Weinberger, 2004; UN, 2004). These losses are so substantial that economists at the Copenhagen Consensus in 2004 agreed that relieving iron and other micronutrient deficiencies should be the second highest priority in world development initiatives, second only to relieving the HIV/AIDS crisis (Economist, 2004). Although essential in diets, not enough vegetables and fruits are available, especially to poor families in developing countries. Rates of production of vegetables and fruits cannot satisfy consumer demand and these micronutrient-rich food sources are often too expensive for the poor.

4.0 Challenges of Fruits and Vegetable Production in Nigeria

4.1 Pest and diseases

Pest and diseases affect fruits and vegetables in the field and subsequently reduce their shelf lives and affect their appearance which is one important aspect of horticultural crops. Fruits and vegetables are vulnerable to bacterial, viral, fugal and nutritional diseases.

4.2 Poor Agricultural Pricing and Low Fertilizer Use

Fertilizer use is promoted mainly by the fertilizer subsidy policy in Nigeria. Input subsidies have been a part of Nigeria's agricultural price policy since independence, and in spite of economic reforms in Nigeria, fertilizer subsidies have remained. In addition, under these sustained and high input subsidy programs, investments in core public goods such as research and extension, which also aim to boost productivity, are limited. Although improved crop varieties exist, low fertilizer use is a serious constraint to agricultural productivity growth, averaging 10 to15 kilograms per hectare. An important factor is low and unstable domestic production. There has been no domestic production of fertilizer since the early 2000s, because NAFCON, the dominant fertilizer producer in Nigeria, has been shut down (IFPRI, 2008). Other issues which affect domestic supply of fertilizers include high transport costs from port to inland destinations, poor distribution infrastructure, the absence of capital for private sector participation in distribution, significant business risks facing fertilizer importers, and inconsistencies in government policies.

4.3 Low Access to Agricultural Credit

Access to agricultural credit has been positively linked to agricultural productivity in several studies. Yet this vital input has eluded smallholder farmers in Nigeria. Banks with large loan funds are generally difficult for smallholder farmers to access. Problems with collateral and high interest rates appear to frequently screen out most potential rural smallholder beneficiaries. In addition, agricultural loans are often short-term with fixed repayment periods, a loan structure that is not suitable for annual cropping or livestock production.

4.4Land Tenure Insecurity

An important institutional constraint is the absence of a clear title to land. Group ownership of land in Nigeria has been associated with such problems as limited tenure security, restrictions on farmers' mobility, and the inevitable fragmentation of holdings among future heirs. It may also limit access to formal credit, since the farmer cannot use land as collateral. This reduces incentives to invest in land quality maintenance or improvement (IFPRI, 2008). Because poor farmers cannot afford alternative farmlands, and do not have customary access to lands not inherited, they remain on depleted lands and further degrade these resources. Thus, poverty and custom may constrain farmers' ability and willingness to mitigate land degradation, leading to declining productivity.

4.5 Low and Unstable Investment in Agricultural Research

When research is poorly funded, agricultural technologies cannot be improved, and there will be no downstream farm income increase, rural employment generation, reduction in food prices, establishment of agro-based industries, and economic growth. In short, the absence of new technologies in agriculture will slow the growth of agricultural productivity and the reduction of rural poverty. Public research and development (R&D) spending in Nigeria has been low and unstable since independence, and the government budget process for funding agricultural research is complex (IFPR1, 2008). The time between the submission of planned budgets by research agencies and the approval and release of funds is lengthy and often out of tune with research work plans. The approved amounts and the disbursement processes very often fall far short of the planned budgets of the research agencies. Private sector involvement in agricultural research has remained negligible to date.

4.6 Poor Market Access and Marketing Efficiency

Fruits and vegetable marketing efficiency in Nigeria is dismally low. Transport costs are high due to poor road conditions, limiting access to inputs, credit, and output markets, and reducing the transmission of key market information.

4.7 Infrastructure

The necessary infrastructure such as adequate water supplies and transport and marketing systems is generally lacking in Nigeria, giving producers, processors and marketers little incentive to expand operations. An inefficient, expensive transport system adversely affects input/output cost and supply, reducing farmers' potential income from marketing their products

4.8 Post harvest losses of fruits and vegetables in Nigeria

Losses of horticultural produce are a major problem in the post-harvest chain. They can be caused by a wide variety of factors, ranging from growing conditions to handling at retail level. Not only are losses clearly a waste of food, but they also represent a similar waste of human effort, farm inputs, livelihoods, investments and scarce resources such as water (World Resource Institute, 1998). Post-harvest losses for horticultural produce are, however, difficult to measure. In some cases everything harvested by a farmer may end up being sold to consumers. In others, losses or waste may be considerable. Occasionally, losses may be 100%, for example when there is a price collapse and it would cost the farmer more to harvest and market the produce than to plough it back into the ground. Use of average loss figures is thus often misleading. There can be losses in quality, as measured both by the price obtained and the nutritional value, as well as in quantity.

In Nigeria, enormous quantities of fruits and vegetables are produced and staggering figures are sometimes given as estimated annual production. For example, figures like 3.8 million tonnes of onions, 6 million tonnes of tomatoes, 15 million tonnes of plantain and 35 million tonnes of citrus have been quoted as annual production levels for some fruits and vegetables, which are really large quantities of food crops (Oyeniran, 1988; Erinle 1989). However, it is the amount of the produce available to the consumer rather than the level of production that is more important.

Fruits and vegetables in their fresh forms contain high percentage of water. They are living and hence carry out their physiological function of respiration thereby absorbing and releasing gases and other materials from and to their environment. These activities lead to their deterioration in transit and storage, which is more rapid under conditions of high temperature and humidity. As a result, heavy losses are encountered in these crops. No one knows exactly how much food is lost between harvest and consumption. The supplied figure for post-harvest loss estimates for fruits and vegetables are difficult to substantiate except on limited, controlled experimental basis. Nonetheless, it is noted that losses as high as 50% are common in fruits and vegetables between rural production and town consumption in the tropics (Oyeniran, 1988). These losses, it is noted, occurred during transportation, storage and marketing (Daramola, 1998; Okhuoya, 1995).

Several factors are responsible for these damages and losses in the fresh produce. One of these factors is vibration resulting from the transport vehicles as they traverse undulation and irregularities on the roads (Jones et al., 1991). Another factor is attributed to the use of unsuitable packaging containers. To curtail or minimize these damages require detail studies to identify the specific parameters involved. Until the locations of handling losses in the system are identified, opportunities to reduce them would be limited.

5.0 The way forward

5.1 Avoiding post harvest losses

Losses can be avoided by following good production practices such as proper irrigation since too much rain or irrigation can lead to decay and too little water can cause growth cracks on fruits. Also, appropriate fertilization is important; too much fertilizer can harm the development and post harvest condition of produce.

There is also a wide range of post-harvest technologies that can be adopted to improve losses throughout the process of pre-harvest, harvest, cooling, temporary storage, transport, handling and market distribution. Recommended technologies vary depending on the type of loss experienced.

5.2 Policy Recommendations

In order to ensure sustained and increased inflow of investment into Nigerian horticulture, agricultural policies must endure and even outlive the governments that formulated them. The practice of changing macroeconomic policies by successive governments is inimical to long-term investments in agriculture. The practice of contract arrangements between outgrowers and private companies needs to be strengthened, since it has been difficult to

promote and enforce contract details between any of the tiers of government and small farmers. Fertilizer subsidy programs in Nigeria need to be market responsive. Specifically, input subsidy programs should be used to develop competitive private sector-led input markets, not weaken them. Such programs should be targeted to resource poor farmers who, without subsidies, would not adopt key inputs. They should complement, not undermine, commercial sale outlets, and they should be limited in duration, that is, accompanied from the start with a phaseout schedule. The current drive towards improved access of women to farmland, extension services, and related farm inputs should be sustained, with the active support of local community-based organizations and international development agencies. Loan terms must flexibly relate to cash flows, the input demand and supply structure, and computable business risks. The government's agricultural credit guarantee scheme, which seeks to guarantee various cadres of loans to farmers, needs to be strengthened in order to reawaken commercial banks' confidence in the scheme. To achieve the desired impact of research funding on agricultural productivity in Nigeria, improved private investments in agricultural research and development (R&D) must be encouraged. Also, greater transparency and timeliness are needed in the budgeting, approval, and fund release processes for agricultural research. The Land Use Act of 1978, which was abused through arbitrary seizure of communal lands, should be reviewed. Communal ownership of farm land will be difficult to dismantle in the foreseeable future; however, the elements which appear to differ among communities need to be reviewed within the context of each community, towards improved title of individuals to farmland, bearing in mind the need for gender equity. The government can build on the achievements of fruits and vegetables listed above by providing infrastructural developments such as electricity and good roads since storage facilities require electricity to run them.

6.0 Conclusion

Providing gainful employment for the teeming youth population has been on top of the campaign agenda for every candidate from local government to federal government who contested any elective position / office in Nigeria since 1999. This should not come as a surprise given the fact that about 2 million youth enter the labour market every year with the number expected to increase to about 5 million or more by the year 2020. Again 70% or more of the Nigerian youth live in rural areas and many of them lack practical skills and business experience to be gainfully employed.

With the appropriate vocational training in agriculture such as vegetable crop production as engaged by **National Integrated Vegetable Farmers and Dealers Union Imo Chapter,** our young people will have better chance to find very decent job or start their own business or key into the various aspects of the value chain in fruit and vegetable crop enterprise. Thus, Fruits and vegetable production in Nigeria is a labour intensive gender friendly though women driven, and a serious business because it provides a means of livelihood for most Nigerian and their families, Cooperative Societies. Above all, it plays an important role in the improvement of the health of Nigerian citizenry, safeguard our environment and provide raw materials for industries. However, the major constraint in the production of fruits and vegetables in Nigeria is inadequate supply of infrastructural facilities which reduce the shelf life of these fruits and vegetables and subsequently bring about great loss of human and capital resources. Therefore, the government needs to improve the infrastructural facilities such as good irrigations system for production, good roads for transportation and electricity to maintain storage facilities in order to sustain the constant supply of fruits and vegetables. Also, Government and the private sector should sponsor research and development for capacity building and manpower development to help sustain the fruit and vegetable crop enterprise now and in the future.

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TABLE 1: LIST OF SOME LEAFY VEGETABLES WITH THEIR MEDICINAL IMPORTANCE

S/N	Name	Family	Source	Common or Local Names	Therapeutic uses
1	Amaranthus hybridus L.	Amaranthaceae	C	green	Tapeworm expellant, relief pulmmary problems
2.	Abelmoschus esculentus (L.) Moench	Malvaceae	C	Okro	Improve and increase sperm count
3.	Basella alba L	Basellaceae	C		Laxative
4.	Celosia argentea L.	Amaranthaceae	C	Lagos Green	Diuretic, cough
5.	Citrullus lanatus (Thunbery) Matsum. Nakai	Cucurbitaceae	C		Malaria, wound dressing
6.	Corchorus olitorius L.	Tiliaceae	C	Ahihara	Laxative, blood purifier
7.	Crassocephalum crepidioides (Benth.) S.Moore	Compositae	C/W		Indigestion, stomach ache, headache, to stop nose bleeding
8.	Crassocephalum rubens (Juss. Ex. Jacq.) S. Moore	Compositae	C		Laxative, stomach ache, liver problems
9.	Cucurbita maxima Duch.	Cucurbitaceae	C	Ugboguru	Fever, stomachic
10.	Gnetum africanum Welw.	Gnetaceae	C	Okazi	Pile, HBP
11.	Gongronema latifolium Benth.	Asclepiadaceae	C	Utazi	Stomach ache, rubbed on joints of children to make them walk.
12.	Hibiscus cannabinus L.	Malvaceae	C		Treat Guineaworm sores
13.	Hibiscus sabdariffa L. var. sabdariffa	Malvaceae	C	Zobo	HBP
14.	Launea taraxacifolia (Willd.) Amin ex C. Jeffrey	Compositae	C		Respiratory problems, chest congestion
15.	Lycoperscon esculentum Mill.	Solanaceae	C	Tomato	Analgesic, embrocation, antibiotic, gonorrhoea, antifungal

16.	Momordica charantia L.	Cucurbitaceae	C		Malaria, Fever, Laxative, diarrhoea, HBP dysentery, gonorrhoea.
17.	Ocimum. Basilicum L.	Labiatae	C/W	Curry	Fever, pile, sedative, stomach problems
18.	Ocimum grattissimum L.	Labiatae	C/W	Nchuanwu	Fever, diarrhoea, dysentry, pile, stomach problems, HBP
19.	Portulaca oleracea L.	Portulacaceae	W	Old bush water leave	Diuretic, urinary troubles, heart-palpitations, antibacterial, antiviral, antifungal
20.	Senecio biafrae Oliv. & Hiern	Compositae	C		Heart problem, cough, wound dressing, rheumatism, tonic
21.	Sesamum orientale L.	Pedaliaceae	W		Diuretic, stomach problems
22.	Solanum aethiopicum L.	Solanaceae	C		Sedative, vomiting, tetanus after abortion
23.	Solanum macrocarpon L.	Solanaceae	C	Ofe	Boils, throat problems
24.	Talinum frusticosum (L.) Juss. Syn T. triangulare willd.	Portulacaceae	C/W	Water leaf	Diuretic, stomach problem.
25.	Telfairea occidentalis Hook	Cucurbitaceae	C	Ugu	Anaemia
26.	Vernonia amygdalina Del	Compositae	W/C	Olugbu	Stomachic, pile, diarrhoea, HBP, worm expulsion
27.	Vernonia. Colorata (Willd.) Drake	Compositae	W	Olugbu ohia	Stomachic, fever, pile, diarrhea
28.	Vigna unguiculata (L.) Walp	Papilionaceae	C	Beans	Dermatitis and swellings

C = Cultivated W = Wild Source: Ayodele, 1996

Table 2. A catalogue of some medicinal plants and ethnomedicinal uses among the Nigerian people.

S/N	Name	Family	Habitat/source	Common names	Medicinal use
1.	Anarcadium	Anarcadiaceae	T / W, C	Cashew / kanshuu	1 – 2 drops of a tincture applied 4 – 5 times a day treats ringworm infection. The bark and leaves used as diuretic.
2.	Carica papaya L	Caricaceae	T / W, C	Papaya, papaw / Okpurukwa	Unripe fruit mixed with garlic and fermented for 3 days is used as a diuretic. Chewing a handful of seeds morning and evening and decoction of papaw with unripe pineapple, lime, 10cm long sugar cane piece, 6 bags of Lipton tea in 4 liters of water has antimalarial effects.
3.	Citrus Aurantifolia	Rutaceae	T / C	Lime / oroma nkirisi	Local application with honey to cure catarrh,

(Christm)
juice used to treat
Swing.
stomachache and

feverish conditions.

4. Ricinus Euphorbiaceae T / W, C Castor bean
5-10g and15 – 30g of
Communis
oil used as a purgative
L.
for children and adults

respectively. External

application of oil is

used to treat skin

infections.

5. Elaeis Arecaceae T / W, C Oil Palm tree/ nkwu,
Oil from the seeds is
guineeensis akwu
administered as an
Jacq
antidote for poisons.

Oil from the kernel

used to treat several

skin ailments and

convulsion in children.

Unripe kernel is

believed to prevent

fibroids when at least

25 – 30 nuts are

chewed every day for

12 weeks.

6. Dacryoides Edulis	Burseraceae	T / C	Native pear / Ube

Resin from the stem is used to treat skin parasites; the fruit is eaten as a remedy for heat conditions.

7. Psidium guajava Linn.	Myrtaceae	T / C	Guava / gova

Leaves are soaked in salt water washed and squeezed and product made up with fresh water to give a greenish liquid that is taken one glass 2x daily for one week to increase blood level. A decoction of 50g of the leaves and bark of the root is made in one liter of water and taken a glass every 4 hours to cure diarrhea and dysentery.

8. Mangifera Indica Linn.	Anarcadiaceae	T / W, C	Mango / mangoro

Boiling of leaves in water and drinking the

	resultant solution is a cure for malaria; Bark is soaked for 24huors and the water extract is used, along with bathing with this 3x a day, to treat typhoid fever.	

N.B. T = terrestrial, W = wild and C = cultivated.Source: Gordian, 2000

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