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Review Article

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Application of Agricultural Solutions to Sustainable Development of Rural Areas- An Institutional Approach

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Abstract

The paper espoused an agricultural solution to sustainable development goals as enunciated in the 2030 Agenda for Sustainable Development and adopted by all United Nations Member States in 2015. Secondary sources of information including internet sources and field experience were used to articulate an agriculture solution to sustainable development of rural areas in Nigeria. Nigeria government released a report on poverty and inequality survey in the country that shows that 40% of total population or almost 83 million people live below the country poverty line of 137,430 naira ($381.75) per year. Further, Nigeria Bureau of Statistics went on to distribute the poverty rate for urban and rural areas as 18.04% and 52.10% respectively with Lagos State standing at 4.5% and Sokoto State 87.73% thereby engendering instability in the polity – within and between the federating units. It is therefore an understatement to aver for paradigm shift in the current strategy against poverty as the country is already overwhelmed by its collateral effect – kidnapping, armed robbery, banditry, insurgency etc. The article is written to frontally address the proximate causes of poverty in Nigeria as a panacea to the debilitating attrition of the nation's social economic life. An institutional approach to development planning based on each community autonomous economic activity research result is advocated. It became obvious that such plan and especially programs for agricultural and rural development is adapted to the needs of the rural man who is the focus and central object. The importance of the plan and sustainable development goal agenda to be anchored on the youth is also elucidated.

Keywords: Sustainable, Development, Poverty, Strategy, Rural, Unmanned Aerial Vehicles

1. Introduction

With the ranking of Nigeria as the poverty capital of the world, poverty alleviation program should be the main development plank for her governments with the objective of turning the country into a state of shared prosperity. Within the context of rural development, poverty have been defined in both absolute and relative terms. In absolute terms the 2001 World Bank Human Development Index Report (HDI) placed people earning less than one dollar per day or per capita income of less than three hundred and fifty dollars ($350) below the poverty line [1]. In relative terms, the comparative incomes, and expenditures of rural to urban people were used and poverty viewed as the relative condition of people [2]. Further, ideas about the incidence, causes and effect of poverty change with time and place. Hence the use of black and white instead of coloured television is viewed as indicator of poverty in present time unlike earlier times. Poverty is however not just low income but includes poor housing, poor schools, inadequate plumbing and water supplies, fewer doctors and inadequate medical care. More importantly poverty is discouragement in people and the decline in the social and economic fabric of communities [3]. In measuring poverty therefore, the use of per capita income, which obscures the true nature, and location of poverty have been expanded to include state of children health, percentage of adult literacy and primary school enrolment, access to standard health services and safe drinking water as well as life expectancy.

Therefore, as development in any given culture depends on the social structures, the attitude and the specific training of the

people who live in that culture, every feature should be examined within the context of the economic, social, organizational, and political conditions prevailing before jumping into planning and implementation. To extricate itself from the dark tunnels of underdevelopment, a country rich in natural resource needs to develop the required technology to drive both the depth and diversity of its revenue, promote job creation, and ultimately improve the living standards of its citizens [4]. This approach does not lie in reinventing the wheel but adopting and adapting the technologies that have been developed within and outside, on the resources with which nature has bountifully endowed the country. It follows therefore that highly developed education and research program in the basic sciences is needed by any country that will want a secured and stable society. A stable society is one where industrialization, public health, advance agriculture, communication etc. can flourish. Further, greater equity in the distribution of national income is impelled by the fact that higher levels of income inequality is historically linked to higher unemployment rates and by extension the extent of economic instability in any country. Both horizontal and vertical inequalities should be addressed. According to Nigeria Bureau of Statistics (NBS, 2023) the poverty rate for urban and rural areas stands at 18.04% and 52.10% respectively with Lagos State standing at 4.5% and Sokoto State 87.73% thereby engendering instability in the polity – within and between the federating units. Use of appropriate taxing policies and provision of safety nets are ways of achieving this objective. The rational for this institutional approach to development planning is that such plan and especially programs for agricultural and rural development is adapted to the needs of the rural man who is the focus and central objects. This is the focal point of this paper.

2. Literature Review

Devising strategy for rural development calls first for a clear understanding of the system, which perpetuates poverty. Various reasons have been adduced for the incidence of poverty, which is most cases, exists side by side with prosperity in both urban and rural areas. This includes [5]:

1. Being born at the wrong time and place, physical handicap, age, education etc.
2. Limited access to natural resources, technology, and services.
3. Lack of institution that can support higher level of productivity.
4. Changing technical and economic conditions of production with mobility of people and economic activities.
5. Vested interests which operate to ensure that not only the benefits of productive activities are distributed inequitably, but that the poor are denied access to inputs, services and organization which will allow them to increase their productivity, e.g., commodity associations.
6. Finally, the decrease in rural population results in decrease in rural non-farm income earning from activities, which are ancillary to high farm population such as household goods, foodstuff, and farm inputs. This is because of high rural-urban migration induced by the nation's education curriculum, urban based petro-economy and official corruption that creates cheap earnings in the various urban centers.

The demographic relevance of the rural area and its strategic importance as the source of the nation's stable food and industrial raw materials cannot therefore be overemphasized. The immediate and long-term implication of undeveloped rural area to the urban centres, compelled several governments of the country to enunciate avalanche of policies and programmes aimed at sustainable development. Literature review on agricultural strategies to develop rural areas in Nigeria reveal that the plank or models on which such policies are based can be classified as:

1. Economic Growth: Increasing economic growth per se would lead to a reduction in poverty by concentrating effort on the "high growth" urban sectors of the economy to virtual exclusion of the traditional sector. This includes the urban and industrial development models, the benefits of which was hoped will eventually trickle to the rural areas. The models did not specifically consider the manner in which the benefit of growth is to be distributed. It ignored the growth potential of the rural areas, thus resulting in economic dualism, urban decay and exploitation of the locale.

2. Agricultural Development: Rural area is synonymous to agriculture; hence the rural area can be developed by increasing agricultural productivity per capital and per unit area, as well as increasing percentage of land under cultivation. Schemes put in place included the National Accelerated food production programme, Operation feed the Nation, land use decree, NALDA, ADP, commodity boards etc. This is the sectoral model for rural development. But the operational goals of rural development extend beyond any particular sector to include improved productivity and concomitant higher income, minimum acceptable levels of food, shelter, education and health services.

3. Area Development Authorities: Certain area are mapped out for development and entrusted to organization such as the River Basin Development Authority and Farm Settlement. The implementation process involves; (i) Coordination of national plan with planning at the local levels. (ii) Continues coordination of the various economics and service functions within the development region. (iii) An active and continuous inter relation between planning and implementation to ensure successful transaction from one level to another and unfortunately active participation of the local population in order to mobilize local resources was ignored and looting of fund meant for development took the centre stage. This model however ended up in creating non-sustainable "Economic Islands" surrounded by "sea of rural poverty" [6].

4. Integrated rural development: This model was exemplified by the Directorate of Food and Rural Infrastructure of the Babangida administration (1986-1994), which seek to develop all sectors of the rural economy, and greater interaction between the modern and traditional sectors through improvement of infrastructures and food production. However, the urban oriented nature of its planning and execution, which exclude those it is meant to benefit, limited its capacity to transform the rural areas.

The lesson from the failure of the above approaches to development in Nigeria is that sustainable development demands that the members of the target group should participate in the organization of program, which in the first place must be geared towards capacity building or empowerment. According to Ngoddy, development implies an increase in the capacity of the people to produce to enable them to solve their own problem and meet their own needs. On the strength of the above outline on development effort in the past it is obvious that the deplorable condition of rural services should in fact be blamed on the ineffective use of models and fund rather than on lack of ideas and resources.

3. Methodology

This study used secondary sources of information and field experience to articulate an agriculture solution to sustainable development, including Internet sources. In order to examine the evolution of key agriculture and rural development strategies over time, a desk review was undertaken where various documents were examined. The author also had exhaustive discussions with various stakeholders to share across-the-discipline knowledge and experiences and making inferences thereof. Finally, a case study of a rural community was undertaken to buttress the institutional approach to development of rural areas.

4. Result And Discussion

4.1. Importance of Rural Area

It is axiomatic that some 75% of the populations reside in the rural area with over 80% living below poverty line. It therefore follows that 75% of all development program must be rural based. The opposite is presently the case. Development of rural infrastructure is a key factor in rural development in so far as it facilitates the harnessing of both the natural and human resources of the locality. However, infrastructure such as roads, portable water or power supply etc. is not an end as exemplified by the under-utilization of the network of tarred roads in some oil producing communities. Even health and education facilities built to modern taste and at high cost by the oil companies and government agencies are rarely put into meaningful use or at best under-utilized. This calls for shift in the present development strategy of the various governments and other funding agencies. This takes us to the concept of felt need which should be the correct basis for research and development in any given environment. A strategy of economic empowerment of the rural dwellers is imperative to their well-being and germane to the sustainable development of the country at large.

Each and every community should be studied with a focus on its natural endowment in the areas of agriculture, commerce, and mineral deposit, human resource, tourism, water resource etc. Poverty alleviation program would therefore be geared toward tapping these resources. The program should be devoid of such economic jargon as return on investment, marginal revenue, pay-back period etc. It should be judged purely as social service: to better the life of the people and to reverse the rural-urban drift. This is the case with roads, water, and power supply projects, which are executed without the bias of economic justification but rather carried out on blank social impetus. Economic empowerment of the rural people must be seen as social service though it has the potential for improved revenue source for the government on the long run.

The concept is not new having served as the development model of the colonial masters. In this historic model no road, railway line, airport nor power plant was built, without economic undertone to sustain the infrastructure. Hence the only railway line crisscrossing Nigeria (64 years after independence) was built by the colonial masters to serve the community markets of palm produce, cocoa, hide & skin, groundnut etc. The country prospered during this period and immediately after. Human resource – the only key to real development was fully harnessed and unemployment unheard of. Children were born and women married to meet the economic need of the household. Education facilities and program were designed to meet the social, industrial, administrative and economic needs of the country- not for the sake of education. Hired labour was limited and many families economically empowered – cutting their coats according to their sizes. The reverse is the case today. Each and every community has its endowment and limitations which can be scientifically exploited for sustainable existence.

4.2. A Case Study of a Village

The town Igbere in Bende Local Government Area of Abia State is endowed with limited land resources that is prone to soil erosion and degradation. Trading and hawking of goods and services in the urban centres of Aba, Umuahia, Lagos, Kano etc. by its people is the mainstay of the towns economy as the people stream in and out of the village either for burial, marriage, age grade meeting, end of years' celebrations etc. The few that remain at home are either old (suffering from one infirmity or another) or cannot fit into the urban hawking business. They eke out life from cassava cultivation, palm wine tapping, harvesting of wild palm produce and causal work such as masonry, farm hands etc. and to a limited extent rice cultivation. The resident population is low and cash striped that commence and farming are at subsistence levels. Except for few food-processing facilities, industry is non-existent. The critical mass for economic production is below the threshold. Igbere is however, endowed with illustrious sons and daughters as attested to by the numerous mansions and self-help projects such as culverts, library, schools, good network of road, electricity, pipe borne water, health centre etc. The community is presently on the verge of installing rural banking facilities. Yet the rural dwellers remain predominantly poor and economic activities next to zero. Life is sustained only by the inflow of cash and material from outside. A typical developmental strategy for a town like Igbere would be:

1. With limited land resources susceptible to soil degradation and gully erosion enhanced by repeated cultivation of food crop (annuals), putting 60% of the total land area to perennial or semi-

perennial crop (cash crop) such as oil palm, rubber, cashew, plantain, cocoa, pineapple etc. which are more environmentally friendly and have higher economic return would reverse the pitiable economic condition of the people. Presently the land is fallowed at the end of every cultivation thereby limiting its usefulness. The people should be reoriented and assisted (through poverty alleviation program) in this direction.

2. The infrastructure endowment of the town by way of housing, roads, pipe borne water, library, post office etc. coupled with low population provides the necessary conditions for the establishment of a tertiary educational institution such as College of Agriculture with Drone Precision Farming Academy (which presently does not exist in Abia State). Moreover, the Igwu River basin would serve as swamp farm and fishery research centre for the school.

3. A town located equidistant from Umuhu, Abiriba, Ozuitem and Item needs only link roads to boast commercial activities as a transit town for travellers. All season roads from Igbere to Umuhu through Eke-Igbere, Igbere to Abiriba through Amankalu and Igbere to Bende through Ozuitem will immediately transform the town to a commercial hub for home bound indigenes of these neighboring communities.

4. In and around the town exist dedicated primary forests "Ofiansi" which have remained untouched since time immemorial. In addition, the famous "Eke-Igbere" one of the few known cradles of Ndi-Igbo (anecdotal evidence) is located on the outskirts of the town. These are potential tourist and wildlife spots waiting for exploitation.

Igbere is therefore a typical case of how people can be economically empowered through their natural resources. The model can be replicated for other towns in the state and country at large. The present emphasis on urban roads and infrastructure takes us no step forward in our poverty alleviation target and overall development strategy. It serves the interest of only 25% of our vocal population who live off the toil and sweat of the 75% rural poor. More of real sector (economic and social) program would serve Nigeria better than all the on-going political projects devoid of economic goals.

4.3. Importance of Mechanized Agriculture to Sustainable Rural Area Development Goals

Take it or leave it agriculture is the bedrock of rural area development and solution to high unemployment rate in Nigeria. Topical in Nigeria today is the intractable problem of sustainable economic growth whose precursor are people and capital formation [7]. Proximate cause of economic growth is increase in knowledge and its application in increasing the amount of capital or other resources per head. It is axiomatic that the motivation for agricultural mechanization is to reduce drudgery, increase productivity and return on investment and ultimately enhance capital formation for economic growth. But for a labour surplus country like Nigeria agricultural mechanization is considered toxic to employment since the sector is responsible for the livelihood of over 70 percent of the population who are mostly into subsistence agriculture. Today agriculture has become poverty incubator of the country wherein over 40 percent of the population are within the poverty bracket earning less than one dollar a day [8]. This is not because farming is not a profitable vocation but the native approach to the business of farming fall below global best practice creating a poverty trap for 70 percent of the population with concomitant avalanche of societal problem such as high crime rate, insurgency, hyper inequality in income distribution and unstable national structure.

As noted, the traditional agricultural sector is characterized by zero marginal labour productivity [9]. Farmers in more developed climes use sophisticated technologies such as robots, temperature and moisture sensors, aerial imaging, unmanned aerial vehicles (UAVs) and GPS technology in the area of precision agriculture to ensure high productivity, more profit, efficiency, safe and environmentally friendly farming [10]. As a result, only 12 to 15 percent of the gainfully occupied population suffice to feed the people in developed countries [9]. In contrast and at low level of productivity 60 to 70 percent of the gainfully occupied population is needed in agriculture for the same purpose. For instance, Ukrainian GDP comes from agriculture sector that employs just around 20% of its population [11]. It therefore becomes imperative that all hands especially those entrusted with the responsibility for defending and building the nation must be on deck to salvage the nation. A sure step towards this is to unleash the power of modern agricultural technology on this critical sector to free the trapped population to the various value chains of agriculture (expected to be induced by higher production and productivity of mechanized farming) thereby creating ambiance for the agricultural value chain market. More importantly is that the released population will create huge market for farm produce as they no longer depend on the below optimal subsistence farming to feed and cater for their daily need. Today this tepid population add nothing to the off take of agricultural produce and services as they can neither afford to buy nor have felt need for them, choosing instead to live on their meagre production or go into crime [7]. Insurgence and banditry thrive because vast area of nations land is unoccupied and forested thereby providing abode for criminals and dens for kidnappers. Hence resolving the drudgery and profitability issues of the current farming scenario is core to attracting the youths to occupy these abandoned areas for food security and safety of life and property.

4.4. Strategy for Rural Development

1. Firstly, a strong commitment to rural development policies at both the state and national levels is required if the impact on the problems of rural poverty is to be effective, integrated and sustainable.

2. Secondly, successful strategy for rural development must consider the feelings of the people and how they envision the world. In other words, the institutional change, which forms the essence of development planning, must be geared first and foremost towards the people, their potentialities, and their motivations. This

is achieved by ensuring that development plans are made known to them and are understood by the target group who will be involved in carrying them out and participate in adapting the plans to local conditions at all stages and in choosing alternatives. A strategy for the development of the rural environment of Nigeria should therefore aim at motivating the people and to induce them to use the resources available to them in the most efficient manner.

3. In this integrated approach to rural development the development plan must propose an institutional structure that will be suitable to the human and natural conditions prevailing in the area with emphasis on autonomous economic activities.

4. Research and planning are the basis upon which modernization or transformation is built.

a) This grass root effort requires research to reveal more accurately and, in more details, the approaches and consequences of different combination of policy variables.

b) Next, it must estimate the size of investments required for this purpose and their appropriate uses.

c) It must establish an organizational framework capable of implementing the various stages of the plan.

d) Above all the plans must be oriented toward implementation through series of concrete projects that can be carried out.

5. The individual lives of the rural citizens must be improved by way of employment, services and social relationships and none is as much in a position to do this than the individual himself [12]. Hence the individual must be equipped with the were withal for personal development.

6. Catching them young appear to offer the best result, hence there should therefore be deliberate effort to attract and train the youths to settle and make a living in the rural areas. Education is the safest and surest vehicle for banishing poverty especially if functional. The curriculum of such education should be in close touch with the life of the community because the objective of rural development is simply to graft on to indigenous life the things that it lacks.

7. Improved productivity requires that rural people be equipped with skills and abilities, which will enable them, make effective use of modern techniques and technologies in their work roles. This can be achieved by establishing capacity building institutes with vocational education curriculum designed specifically for the locality following detailed research on the local government. Tuition in such institutes should be free and degree awarded on successful establishment of own rural based industry.

8. Without an effective system of marketing, supply, credit, transportation, and other services the rural dweller is unable to transit from poverty to prosperity. A supporting system serves the population of a number of villages. The function of the supporting system is to provide him the incentive to convert his closed economic operation to a market oriented one. Such centres must achieve maximum dispersal of service units, efficiency of services both as to price and quality, and the concentration of the services that function on a similar scale in a single physical location, so that they can attract the necessary skilled personnel. A cooperative society professionally managed by the participating villagers or nongovernmental organization (NGO'S), town welfare unions, age grade, the church etc. on close monitoring and support by government, are ideal for running such result-oriented centres. Whatever is the management arrangement the branches of the supporting system must be brought as close as possible to the rural communities and the method of dispensing the service adapted to their level of understanding.

9. The shortage of skilled staff to implement rural development program should be a major consideration in the design. Many professionals prefer to work in the urban area because the salary scales, allowances and status of people working at the bottom of the development hierarchy in the rural area are low. The lack of amenities in rural areas deters well-trained person from staying there. To remedy the situation, staff in such areas should be given better pay and allowances with an award of distinguished rural service. Complex procedures should be simplified for possible use of lower manpower followed by localization of recruitment to strengthen the links between development services and the community. Training programs for agricultural extension agents, health workers and cooperative staff must be relevant to the actual needs and priorities of particular local situation.

10. Effort must also be made to create teams of development leadership, which must be actively supported by the highest authority, and an appropriate degree of responsibility delegated to them. They must have certain personal qualities such as community opinion leaders e.g., primary school teachers, religious leaders, and age grade leaders to be used as agents of change.

11. Finally, the development of regional rural towns to support the desired institutional framework is necessary for three reasons:

• To activate the supporting system where the professional workers such as teachers, doctors, engineers, technicians, planners, and agricultural instructors can live since they are not prepared to live in a village.

• Serve as an appropriate location for the development of the agricultural and ancillary industries. Here surplus manpower can be absorbed as it is gradually released by more efficient agriculture and to create a market for local agricultural products.

• To bring urban culture to the countryside and hasten the process of modernization.

4.5. Strategy for Development of Agriculture

The attrition on agriculture, demands massive attack from both ground - tractorization and air - agricultural unmanned aircraft vehicles (UAVs). The development of advanced electronics, Global Positioning Systems (GPS) and remote sensing have enabled advancements in the practice of precision agriculture whereby agronomic practices are based on variations in soil, nutrition, and crop stress [13]. Fortunately, Nigeria is endowed with enormous land resources relative to her population. Not only will it create job and market upfront, but it will provide adequate raw material for the ailing processing plants doting the country and currently operating far below installed capacity due to lack of raw material and limited market. Examples are the tomato, sugar cane, rubber, oil palm, breweries, rice and other plants which cannot adequately source the local content of their raw material needs. It

therefore follows that a panacea to this problem is the use of new high-yield crop varieties in combination with new technologies for their cultivation, introduction of advanced and high-performance equipment and new forms of work organization in the agricultural sector.

At the heart of this approach is precision agriculture concept - a set knowledge of intensive technologies that maximizes the use of agricultural resources and reduces the cost of production thereby maximizing performance and increasing the profitability of land use. In mature agricultural countries, precision agriculture is used for planning the workload, hiring of farmland, accounting for field areas, monitoring of plant health condition and discriminatory application of fertilizers [7]. The proper implementation of artificial intelligence (AI) in agriculture helps the cultivation process such as scaring swarms of bird in rice farms and locust invasion, spraying of areas, theft protection, creation of fields' maps, monitoring the evenness of germination and ascertaining the 13 availability of necessary plant nutrients over large area. With the help of the agricultural unmanned aerial vehicle (Ag UAVs) the spread of plant diseases can be fixed on time, purposefully apply fertilizers or spray chemicals against pests [13]. Notwithstanding the above assertions, the widespread lack of knowledge and experience with technology remains the biggest challenge frustrating the ubiquitous adoption of precision farming in Nigeria. Hence the urgent need for a technology empowering centre for the farmers. This will usher in optimum input and environmentally oriented, intensive farming systems to boost rural development and transformation and eventually result to structural transformation of the national economy. Appropriate institutional support systems are however needed to make intensive agriculture production sustainable, profitable, regenerative, and supportive of the land and water resource bases, and of the environment [14].

Towards rendering agriculture attractive and profitable the following strategies are therefore proposed:

• Agricultural development policy: dedication of sizeable percentage of oil money to agriculture infrastructure, income equalisation, agriculture human capital and agricultural technology research and development.

• Price inducement to work on land at a return approximating the opportunity cost of labour.

• Guarantee minimum floor price on basic agricultural commodities.

• Buy farm produce at economic rate rather than commercial rate during the peak season and sell to the public at appreciated price during the lean harvest season.

• Public Private Partnership (PPP) agencies to process produce into servable lunch packs for pupils in public schools across the country.

• Public work scheme on small dams and irrigation ditches, bench terraces, well and farm drainage, farm to market roads, re-a forestation, land clearing and storage facilities, flood control schemes etc.

• Intensify agricultural production and increase employment using inorganic fertilizer, improve plant varieties, insecticides, fungicides, simple implements, and small-scale irrigation techniques [15].

• Put in place institutional complementaries of considerable administrative abilities, foresight, technical competency and intelligent planning.

• Highly tax imported rice and wheat and other farm sourced imports.

• Encourage the establishment of low capital food transforming industries and industries which provide inputs to the agricultural sector.

• Establish satellite colleges of agriculture with academic curriculum functional enough to produce only young farmers not just agricultural scientists and teachers- certification based on establishment of own farm.

• A drone precision Farming Development Centre that will facilitate the adoption of agriculture unmanned aerial vehicle (Ag UAV) technique for precision farming in Nigeria.

• Power supply policy: deregulated, localised, affordable and uninterrupted power supply- a prerequisite for economic development and poverty reduction.

4.6. Strategic Youth Development Scheme: Agriculture

The aim of Strategic Youth Linkage Scheme is to develop a class of farmers that are sufficiently motivated, willing, and able to respond to the possibilities opened up by new techniques, land holding arrangement, transport facilities, market incentives and credit organizations. It is a linkage model because the youth coming from agricultural institution is given academic tutorial and awarded a diploma by a recognized institute while working on his farm. The youth farmer is placed on a sustenance wage for the gestation period and all other input paid for by the funding agent/ government. Further the government insures and stabilizes the produce market by various intervention actions including buying off and storage for lean season, facilitates value added export and set price inducement to work on land at a return approximating the opportunity cost of labour. In this model, progress in agricultural development is not measured by cheap agricultural produce in the food and commodity market but by the prosperity of the farmers who toil year in year out to feed the nation.

The specific objectives therefore include:

• To reverse the dwindling hectare under cash crops by arousing the interest of youths in its cultivation instead of the present fruit hunting.

• To create opportunity for cash crop farmers to earn income during the gestation periods of cash crop by intercropping.

• To improve the supply of raw material to industries that depend on local farm produce

• To increase the exchange capacity of the states- export

• The improve the internally generated revenue base of the states through produce tax

• To arrest the current high rural urban migration and its attendant social problems by improving the economic climate of the rural areas.

• To reactivate rural socio – economic life
• To narrow the rural –urban income gap that presently leaves about 75% of the population impoverished.
• To provide employment for the teeming army of unemployed youth especially agricultural science graduates
• To optimize the allocative efficiency of the rural land resources by reducing areas under the traditional fallow cropping system.
• As a strategic model for poverty alleviation programme of the present government, UNDP, NGO etc.
• To arrest present level of soil degradation induced by arable cropping by agroforestry-food crop intercropped with perennial tree crop, firewood trees- acacia etc.

This strategy for mass mobilization of youth for national development through agriculture requires the following:
• Political will to create rewarding employment for the youth
• Agricultural development policy that dedicates sizeable percentage of oil revenue to agriculture infrastructure, income equalization, agriculture human capital and agriculture technology research and development.
• Public work scheme on small dams and irrigation ditches, bench terraces, well and farm drainage, farm to market roads, re-a forestation, land clearing and storage facilities, flood control schemes etc.
• Increased agricultural productivity using affordable inorganic fertilizer, improve plant varieties, insecticides, fungicides, simple implements, small scale irrigation techniques and capacity building.
• Establishment of low capital food transforming industries and industries which provide inputs to the agricultural sector
• Deregulated, localized, uninterrupted and affordable power supply
• Satellite colleges of agriculture with academic curriculum functional enough to produce young farmers' not agricultural scientists and teachers.
• Institutional complementaries of considerable administrative abilities, foresight, technical competency and intelligent planning.
• Provision of land to agricultural graduates of the capacity building institutes for own farm prerequisite for certification.
• Establishment of supporting system to serve a number of farm clusters.

4.6.1. Tripartite Model

As a Tripartite Model It involves

• The government/funding agent to (i) Provide political support (ii) Monitoring and evaluation through the ADP's (iii) Pay the consultancy/management fees (iv) Provide land and fund for inputs- seedlings, agrochemicals, tractor and equipment
• The Project Firm (i) Provide technical services, execute and supervise all the project works (ii) Guarantee the success of the project (iii) Enter into legal agreement with selected participants (iv) Collect produce tax on behalf of government from participants on maturity of the farms
• The farmer (i) Provide manual labour and security for the farm (ii) Provide land. (iii) Form stakeholder forum with other farmers. (iv) Owns the farm.

4.6.2. Project Life Cycle

➢ Initiate: (i)Secure sponsorship and publicity- radio, television, and bill boards (ii)Selection of participants and farm locations
➢ Feasibility Survey: (i) Project background – land tenure, farmers capacity, (ii) Technical Survey – land survey, soil survey, crop system, environmental demands etc (iii) Market analysis (iv) Cost estimate – Benefit and return on investment
➢ Implementation: (i) Selection of participant based on feasibility report (ii) Obtain financial support by presenting business case (iii) Project planning and execution (iv) Project monitoring and control (v) Farmers training and induction
➢ Close: Return to routine activities and collection of tax.

4.6.3. Activity List

- Presentation of business case to funding agents
- Publicity
- Visit/feasibility study
- Project planning
- Nursery development
- Field establishment
- Capacity building
- Collection of produce tax for government.

4.6.4. The Unique Selling Point (USP)

The proposed model gives commercial bite to the business of institutional agricultural extension. It does not stop at the demonstration level but pushes extension into the realms of commerce and industry, assured farmers of regular income and occupation while providing government sure source of internally generated revenue. Our strategy eliminates the frustrating bureaucratic red tapism that characterizes government business by providing an interface between the farmers and government, buffering as much as it is possible the "come today come tomorrow" syndrome of government business. The model has advantage over the large-scale plantations and mono cropping systems which are out of tune with our cultural farming system. The farmer's alienation associated with acquisition of family inherited land and subsequent bad blood generated does not arise as farmers keep title to their land and merger is not compulsory. Services are rendered at minimal breakeven farm sizes fragmented and in clusters as is usual with rural peasantry. Our strategy also provides for monitoring and evaluation by appropriate government agencies, funding agents, NGO, and farmer's interest groups. We also guarantee the success of each and every farm as well as the speedy recovery of government investment on the long run through produce tax collection. Computer stimulation of agro ecosystems would be employed to determine which crop should be planted and in what combination. By adopting the human quality solution, the farmer would be imbued with the necessary psychological

and economic orientation that enable the existing land tenure systems, cooperative farming, credit facilities, research results and market access provide him the necessary inducement to progress to industrial agriculture. Community development, education, schools, dispensaries etc. would become more meaningful as part of attack on low agricultural productivity by our farmers. The model enunciated is one sure way to render the various schools and colleges of Agriculture relevant and true to their mandate.

4.7. Role of Government

In all it must be pointed out that poverty is best reduced by directly supporting the productive activities of the poor thereby creating a fairer economic environment to enable them to perform better. The role of government in realizing the above objective cannot be over emphasized. Such roles include:

• Transferring the gains of the petroleum proceeds from the urban to the rural area by way of carefully designed subsidies for agricultural produce using commodity credit corporations.

• Increasing investment on economic activity and employment in rural communities by way of loans for housing, conservation, watershed and flood control project, sewer and roads, water facilities, rural electrification, telephone, recreation etc.

• Provision of land to agricultural graduates of the capacity building institute for farm establishment (a prerequisite for certificate award) and the creation of enabling environment for rural growth.

• To ensure that the rural dweller has equal opportunity to education as the urban man through free education to all youths dwelling in the rural area. This will enable them to compete favourably in the job market. This need becomes urgent in the face of dramatic changes in the economy because of scientific and technological innovations, which makes education and retraining of rural youths and adult imperative especially in the area of vocational education. 5) To adjust the national education curriculum from its present emphasis on urban related skills even in rural schools (which encourages the out migration of the cream of the rural work force to urban centres) to education curriculum designed for habitation in rural environment. The principle of fair income which requires that the average income of farmers (over 80% of the rural dwellers) should equal the average income of gainfully employed persons in the country, should form the equity policy position of the government – to give the rural dweller the pride and dignity in his way of living.

5. Conclusion

The paper highlights an agricultural solution to sustainable rural area development goals as enunciated in the 2030 Agenda for Sustainable Development and adopted by all United Nations Member States in 2015. The paper emphasised that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth etc., by deploying autonomous economic based research, innovation and technology. The institutional approach to development planning as espoused in this paper is based on the fact that such plan and especially programs for agricultural and rural development is adapted to the needs of the rural man who is the focus and central object. The place of the youth to drive the sustainable development goal agenda was elucidated and buttressed. Agricultural solution to sustainable rural area development goal is feasible as enunciated if and only if the political will exists and the culture of policy ownership driven by entrepreneurial spirit and research is imbibed. In the words of, the ultimate aim of economic development should be to increase productivity by industrializing all forms of economic activity including agriculture [16].

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