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Enhancing The Quality Of Agricultural Technology Education In A Developing Economy

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ABSTRACT

The development and transformation of Nigerian agriculture vis-a-vis the development of Nigerian economy has been the utmost concern of government, researchers and many individuals. Most developed and developing countries of the world have long realized that the only way to meet adequate diet and food demand of their people is by acquiring functional literacy, knowledge and skill for productive activity. Education policies in Nigeria have often focused on raising aggregate enrolment figures, training more teachers and building more schools, paying attention to the lopsidedness in the geographical distribution of educational facilities across the nation for the sake of social justice and equity. However, until recently, conspicuously absent in most planning efforts in Nigeria is the concern for the quality and relevance of our educational training towards National development. It is against this background that attempts is made by this paper to raise some basic issues relating to Agricultural Technology Education, this is with a view of establishing a basis for understanding the problem and indicate possible directions for policy making.

Keywords: Quality, Agricultural Technology, Education, Developing Economy, Schools, Building

1. INTRODUCTION

The quality of graduates from our educational faculties has been criticized in terms of the usefulness of their training to industry and the inability of their training programmes to assist the students to adapt what they learned to their local conditions as well as national needs. The most critical need of Nigeria today is economic freedom. It has often been argued that Nigerian's educational system mainly equips the youths with theoretical skills for sixteen (16 years and leaves them to face the frustration of joblessness and careerless life (Ogbimi, 1999). Economic freedom can only come about with strategic investments in relevant sector of the economy. It is worthy of note that an economy with vibrant human resources; ingenious, creative and innovative such as Nigeria should not lag behind Asia countries manufacturing basic products that add value to human existence. But the reverse seems to be the case.

This state of affairs obtain because entrepreneurship has thrived in those emerging Asian giants like Korea, Malasia and China, with much of man-made obstacles chief among which is corruption contrary to what is obtainable in Nigeria. Human resources is one important factor that this country is blessed with. The training of such human resources is a major function that the educational system is met to perform.

The question now is whether the educational system is meeting up with this challenge of training manpower capable of applying their learning to the relevant Nigerian's development in the areas of industrial and agricultural production and distribution. Whereas it cannot be stated categorically that the educational system have failed completely to deliver on these laudable objectives, it can be stated unequivocally that a lot still remain to be done. It is in the light of this that this paper tries to advocate an approach that will ensure that agricultural technology graduates do not just graduate but also have something to fall back on in terms of relevant skills and possibly opportunity to lay claim to; or those who are motivated to help themselves and be entrepreneurs.

2. EDUCATION AND ECONOMY DEVELOPMENT

There are primarily two types of nations in the world today. These are the pre-industrial and post-industrial nations. Whereas the pre-industrial nations are poor, troubled and live in miserable socio-economic conditions, the post-industrial nations are rich and enjoy high standards of living. The post-industrial societies, history shows, were also technologically backward and poor many centuries ago. industrialization is probably a transformation which a nation achieves n the course development. Achieving industrialization, as such, should be the major objective of the poor nations of today.

The unending spectre of food shortages and insecurity hat pervade the land keeps reminding us that there continues to be a missing link in the agricultural strategies of our nations. In Nigeria today, in spite of our enormous natural endowments of good agricultural land, abundant ground and surface water, forest resources and human capital, food is not readily available for all. Food import is almost set to outstrip local production. Poverty is taking a firm root, while the rural-urban drift is becoming an exodus. Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. Expected livelihood outcome include:

- More income.
- Increased well-being
- Reduced vulnerability
- Improved food security
- More sustainable use of the natural resource base

3. STATE OF NIGERIAN AGRICULTURE

We now see that Nigeria is poor largely because large numbers of the citizens making up about 75% of the working population are poor. They are poor because they are predominantly rural dwellers, who are also mainly engaged in subsistence farming as a way of life. They remain poor because of their increasing lack of access to capital assets. Also their means of production consists of primitive tools -hoes, machetes, hooks, diggers, etc in their pristine shapes and sizes, preserved as inherited from their great-grand fathers, powered by the human muscles, with its natural limitations.

It is particularly frustrating to see agricultural technology institutions established in developing countries -sometimes rather well equipped - devoting their entire capacity to advanced agricultural engineering technology but completely ignoring the kind of technology which could be of interest to the farms in the country Modern agricultural engineering technology is oriented towards commercial farmers with buying power to acquire industrially manufactured goods. The developing countries need another type of engineering technology oriented towards the use of available resources and materials to develop equipment and methods for crop production, processing and storage. The small farmers must be offered an appropriate agricultural mechanization. That means an emphasis on those farms that average or less in size for any specific country. Tools, machines and equipment most feasible for these farms are logically manufactured by local shops. The production skills and capabilities of these local manufacturers need to be improved in order to adequately fulfill the market needs.



Fig 1: Agricultural Education for Rural Development in Nigeria

Source: Disciplines in Nigeria - <https://disciplines.ng/agricultural-education-for-rural-development/>

A policy of poverty alleviation must, therefore to be effective, target the agricultural sector as a priority. In targeting the sector, one area of emphasis must be the provision of appropriate agricultural infrastructure (machines, equipment and facilities) for pre- and post-harvest operations to remove the inherent toil age and drudgery, and thereby commence a cycle of increased productive and improved of life for the millions engaged in production agriculture, A well developed agricultural will naturally and logically prepare the base for rural and urban industrialization

4. AGRICULTURAL TECHNOLOGY EDUCATION

The aims of Agricultural Technology Education in and developing nation as Nigeria should among others help:

1. to increase the income and improve the welfare of the small holders farmers
2. to foster farm equipment manufacturing in developing countries.

Improve mechanical technologies contribute directly to these goals by increasing food production through increased yields, reduction in field and post- production losses, increased cropping intensity, and improvement in quality and value of agriculture products. Appropriate machines and also reduce costs while mechanization based on local production conserves foreign exchange, expands opportunities in rural-based industries strengthens linkages between agriculture and other sector of the economy, and enhance small-scale manufacturing skills. Agriculture having the spectrum from pre-planting to the market, Production is only one phase, Processing, Handling, Transportation and Marketing takes on new significance.

Agricultural Technology Education in a developing agrarian economy should help the learner and/or graduates to evolve technology appropriately that are characterized thus:

1. Emphasise the use of locally available materials in order to lower costs and reduce supply problems;
2. Are relatively labour-intensive but more productive than many traditional technologies;
3. Require only small amounts of capital;
4. Are small enough in scale to be affordable to individual families or small group of families;
5. Can be understood, controlled and maintained by villagers whenever possible, without a high level of special training;
6. Can be produced in villages or small metal workshops;
7. Offer opportunities for local people to become involved in the modification and innovation process;
8. Can be used in productive ways without doing harm to the environment.

5. OPTIONS FOR ENHANCING THE QUALITY OF AGRICULTURAL TECHNOLOGY EDUCATION IN NIGERIA

Agriculture is undergoing a rapid transformation globally, away from an agricultural production (supply driven) focus, towards a market-driven "agric food" orientation (Ihekoronye, 2002). This accord with Momodu (1998) which suggest that world-wide the real price of agricultural products will trend downward in the future. Consequently, to achieve the desire quality of manpower needed for agricultural development in Nigeria, manpower training must be pursued with vigour, if any form of self-reliance in agricultural development must occur: a brief rundown of some ways of actualizing this dream are as follows:

Curriculum Remodeling

To effectively address the issues and redeem the situation, it has become necessary to reorder the training programmes to make the graduates job creators and to provide for self-reliance. It has also become necessary to address areas of agricultural produce processing, storage and transportation. The new orientation also needs to address mechanized training and engineering of farming implements and machines. It needed to address production of agro-chemicals and other agro-allied manufacturing industries. This will undoubtedly upgrade the academic and professional standard of the programme and make them more relevant to modern agricultural productivity.

Assessment of the present and future technology manpower needs in Nigeria's Agricultural Industry

For effective National economic planning availability of reliable data is an indispensable tool. Lack of coordination between manpower development and the requirements of the country's economy has been attributed to Nigeria's current employment crisis. This problem may not be unconnected with the absence of a conscious and deliberate effort and manpower planning. The number and mix of all categories of agricultural technology personnel should be projected for well in advance in order to be able to plan for their appropriate training.

Giving Priority to the Development of Entrepreneurial Activity

The principal goals of giving priority to the development of entrepreneurial activity would among others be to:

- meet urgent food and nutritional requirements of an expanding workforce for which health is fundamental and anchored in the nutritional quality of the national diet.
- reduce qualitative and quantitative losses of agricultural products by bringing industrial processing nearer to the sources of raw material production.
- augment foreign-exchange earnings by providing the basis for the export of processed products and extractives rather than low-value raw materials and semi-processed products.
- provide much-needed experience and training in the dispersal of industrial growth to backward and rural areas so as to generate new and enhanced employment opportunities.
- create enhanced opportunities for expanded spread of ownership of production units.
- stimulate the development of technological capabilities in terms of the capacity to engage in different scales of productive technologies in food processing.
- foster the development of engineering capabilities to design and manufacture food processing and ancillary machinery.

In the light of (3) above, self-sustaining Agricultural Technology Institutions in the next decade, is an unavoidable imperative, if the nation's desire to keep pace with revolutionary trends in agricultural methods and practices in a globalise world, is to be achieved.

The imperative is however predicated on improved funding and good management of our institutions, by the policy makers, under clearly articulated and enforceable policy-directives geared towards boosting the production of relevant manpower in quality and quantity.

- a) Improve the health of works and their families increasing wellbeing and productivity.
- b) Eradicating open field defecation (OFD) and environmental contamination and pollution surface water of soil and ground water (Ibhafidon–Momodu, 2016).
- c) Reduce climate change impact through reduction of methane emissions (SEA, 2018).

6. CONCLUSION

In view of the proceeding discussions, to accelerate economic development in a nation vis-à-vis enhanced agricultural activities, there is the need to build human capacity by first identifying training needs, and to reorient formal training systems towards making them more relevant to the needs and challenges of the national and globalise economies.

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