

## **DEVELOPMENT OF LOCAL RAW MATERIALS FOR POVERTY REDUCTION IN NIGERIA USING INDIGENOUS TECHNOLOGIES**

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### **Abstract**

Over 70 percent of 120 million Nigerians live in the rural areas. These areas lack basic necessities of life like electricity, good roads, portable water, health facilities, etc. The abundant local raw materials which Nigeria is blessed with can be developed by adding values to them through the establishment of small and medium scale enterprises in the rural areas. The abundant idle labour can be harnessed to work in these areas through a coordinated efforts of government and some necessary agencies interested in poverty reduction. Government can come in by providing incentives like loans, technical expertise and managerial functions. All the past efforts at research in the development of agricultural and mineral resources should be diffused into these ventures and the necessary gains thereof, should be enjoyed by the rural populace thereby reducing their poverty level.

### **Introduction**

Nigeria is the most populous black nation in the world with an estimated population of 120 million people. Over 70 percent of this population lives in the rural areas. From the report of the United Nations, this population lives below the poverty level. They lack such amenities like good drinking water, electricity, good roads, health facilities, and other infrastructures that will enhance good living standard.

At the heart of the poverty lies the mode of production which is still subsistence with a very limited application of science and technology. The application of science and technology raises productivity and thus, releases excess labour accruing thereof to other productive tasks. This issue has resulted in the underdevelopment of the abundant resources which Nigeria is known to possess. Technology is central to manufacturing and consequently, to the development of any economy. The path to effective and sustainable development of our natural resources lies in using indigenous technologies. This will bring sustained industrial growth and poverty alleviation in Nigeria.

Already, there are many indigenous technologies for processing our natural resources. There should be a coordinated effort towards developing these techniques and installing them into the rural small and medium industries to encourage their application.

The rural poor are obstacles to development and should be mobilized through mass education and community development programme to reach the critical take off point into self-sustained growth. The massive establishment of cottage, small and medium scale industries arising thereof, from these home grown technologies will ginger the development of the abundant agricultural and

mineral resources which hitherto is being wasted. Rural farmers will now be aware

of modern techniques of crop multiplication, preservation, processing and utilization. This will enhance their average income and help to improve their lives and reduce the incidence of poverty.

This paper addresses these issues, and highlights the effort so far in the development of indigenous technologies by some organs of government. The devolution of these technologies into rural industries is canvassed for as this will develop the abundant local agricultural and mineral resources thereby, the incidence of poverty drastically reduced among the rural populace.

### **Poverty Situation in Nigeria**

From the reports of the United Nations in 2002, Nigeria has been ranked as 13<sup>th</sup> poorest nation in the world. Their condition of poverty is characterized by low incomes, undernourishment, diseases, illiteracy and others. All these constitute a great drag to development. Out of every one thousand of newborn babies, one hundred and fourteen die before first year.

Only four out of ten persons in Nigeria have access to safe drinking water, and only one out of twenty Nigerians use flush toilet. The average in take of calories per person in 1999 was 6400, whereas the dieticians then estimated that the minimum level for well being was 50,600 (Chikezie, 1999). The mass of peasantry in Nigeria eats very little meat, fish, milk or egg, but subsists mainly on cereals (maize, yam, cassava, rice, etc.) This causes protein deficiency leading to kwashiorkor and other associated diseases.

These nutritional diseases debilitate and allow a wider incidence of disease such as malaria, estimated to affect some 20 million Nigerians yearly.

The poor standard of hygiene in the rural areas and absence of an adequate health facility leads to death or in the minor, saps the vitality, dulls the mind, engenders feeling of apathy and resignation and reduce the capacity and output of the average rural labour (Mountjoy, 1976).

Illiteracy has also contributed immensely to underdevelopment of the country. Majority of school children still study under trees. Over 40 percent of the populations are still illiterate. It is this illiteracy and general ignorance associated with it coupled with the engrained resistance to change that is proving a formidable obstacle in furthering hygiene, in introducing new crops or methods of husbandry, in advancing manufacturing industry.

To provide and develop successfully, a substantial industrial segment of the economy will require a considerable rising of the quality of the population. The conversion of the illiterate, undernourished, apathetic and disease ridden agricultural workers into alert, healthy and skilled industrial operatives will prove a costly, lengthy and difficult metamorphosis, but has to start immediately. Even more important will be the emergence of smaller number of men prepared to take risks in investment and innovation and no longer putting their money into land but bringing in science, new techniques and advertising into industry.

### **Indigenous Technology and Poverty Alleviation**

Technology represents an aggregate of activities meant to transform input (labour, capital, materials, etc) into useful outputs. These outputs are the desired state to which the materials are put in use. The Structural Adjustment Programmes of the mid 1980's gave impetus to many innovations. Many prototype machines and equipment were manufactured. It has been proved that these indigenous technologies process our local agricultural and mineral resources better than their foreign counterpart (Odigboh, 1986). This gave rise to the establishment of many cottage and small scale enterprises employing these techniques. Apart from equipment, many products were substituted with their local versions. These activities raised the living standards of Nigerians and helped to make our economy less dependent.

### **The Role of Government in Promoting Indigenous Technology**

Government quickly realized that the only way to sustain the impact of these technologies to sustained industrial development and reduce the incidence of poverty is to provide a coordinated approach. This, they did by setting up and resuscitating such agencies and parastatals as Raw Materials Research and Development Council (RMRDC), National Science and Technology Centre (NASENI), the National Office of Industrial Policy, the National Consultative Committee on Industrial Research and Development, and well over twenty other agencies and parastatals.

They were charged with the responsibilities to:

- prepare and maintain inventory of science and technology resources available in the country;
- acquire, process, store, retrieve and disseminate research findings in the country; and
- Resource endowment of the country, i.e. their location and output values.

The Raw Materials Research and Development Council on its own part, have come up with many innovative researches into raw material, equipments and plant development.

This has helped to commercialize indigenous inventions and innovations. This process of commercialization encouraged innovative entrepreneurs with limited resources to set up new production lines or expand existing ones based wholly or partially on indigenous technology. The Raw Materials Research and Development Council (RMRDC) also sponsors research into the design and fabrication of machinery, equipment of new processes as well as upgrading and simplifying the technologies of identified priority areas and diffusing them in strategic localities. These are designed to encourage the development of indigenous technology, proliferation of small-scale industries in the rural areas and optimal utilization of our local raw materials.

RMRDC has also initiated and promoted local design and manufacturing of appropriate machinery for the exploitation, conversion and utilization of

energy resources and as a result, there have evolved over the years, simple, affordable

and reliable energy systems to aid rapid development especially of the rural community (Okpalefe, 1997).

### **Establishment of Small and Medium Scale Enterprises**

The importance of small and medium scale enterprises in promoting indigenous technology development and economic self reliance has gained increased recognition in many developing countries, especially with the realization and acceptance that the import substitution strategies of many large scale enterprises, could not fully accomplish an-accelerated move to sustained growth owing vulnerability of import substituting industries to external shock (FMI, 2000).

Small and medium scale enterprises should harness all the local creativity and inventivity for manufacturing. These enterprises should be established in the areas where there are proven abundance of the raw materials or where their use will improve the state of the raw materials, the acquisition of that relevant technology or as versatile tool to reduce the incidence of poverty.

The SME's benefit the people through:

- ✓ employment generation for rural people
- ✓ transformation of traditional to modern technology & greater utilization of local raw materials
- ✓ industrial dispersal
- ✓ promotion of local technology amongst other issues.

Proper coordinating of SME's will facilitate industrial diffusion and imbibe the culture of industrialization among Nigerians as is witnessed in places like Singapore, Indonesia, Korea, etc., which owe their industrial and technological development to well coordinated SME's sub-sector.

### **State of Infrastructural Development**

For effective technology acquisition, adaptation and promotion, there has to be adequate and reliable infrastructure to sustain it. It is no longer an issue that the state of infrastructural facilities in Nigeria cannot sustain any meaningful industrialization (Ogbulafor, 1999). The present administration has been doing much to improve on the infrastructure by the provision of electricity, good roads, health facilities, improving on the teledensity, labour facilities, etc.

### **Some Economic Considerations**

Government have recently passed into law the Small and Medium Industry Development Agency (SMIDA). This is with a view to coordinate the activities of these enterprises towards serving the purpose for which they were meant. One problem that has plagued the development of small enterprises in Nigeria over the years is lack of access to loans, incompetence in running them and general apathy resulting from non input of modern techniques to productive tasks. It is expected that SMIDA will provide these assistance in conjunction with some other agencies that encourage SMH's development. Already, Small and Medium Scale enterprises can now have access to the smalls and medium industries equity investment scheme (SMBIS) loan which has amounted to over N 13 billion by the end of year 2002 (Punch, 2003).

Government has also prevailed on the committee of bankers to bring down the interest rate which was over 35 percent in 1999 to as low as 22 percent. The other economic factors which hamper development of small industries like inflationary rate has been brought down to as low as 12.5 percent this month by combined effort of government's economic teams. It is envisaged that all these favourable economic climate will encourage rapid development of small and medium scale enterprises which is envisaged to be established at every nook and cranny of the country. This will in no small measure, help in reducing the incidence of poverty among Nigerians.

### **Conclusion**

Nigeria is blessed with abundant human and natural resources. These resources have not been given the necessary impetus for development due to limited application of science and technology in productive tasks. The current poverty level in the country could be reduced if concerted efforts are made in the development and utilization of our local resources using indigenous technologies. It has been proved that indigenous technologies can process our local raw materials better than their foreign counterparts. The indigenous techniques of processing will engender massive industrial applications even in the rural areas where abundant labour could be found. Those local incentives and creativities could be developed further as their use progresses with time. This is an area where government's further involvement by way of coordination and encouragement should come in. Such organs created by government over the years have also done remarkably well. Worthy of mention is the Raw Materials Research and Development Council (RMRDC). They have carried out many researches into local raw materials development. Some of the designs in plant and equipment construction have reached pilot plant stage, and some have been commercialized as catalytic plant. All these can be devolved into the rural areas as poverty alleviation ventures.

Government should provide a conducive economic environment to make such ventures viable. Products from these ventures could also benefit from the African Growth and Opportunities Act (AGOA).

This is a measure by which the United States of America wants African countries to benefit from the United State market, the most capitalized economy in the world, provided the products have 100 percent local content. The favourable economic condition in Nigeria now can also favour this programme of massive industrialization, and government programme of poverty reduction can be channeled more progressively through this way.

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