

INNOVATIVE UTILIZATION OF FORESTRY EDUCATION AND FOREST RESOURCES IN ECONOMIC REHABILITATION AND SELF-RELIANCE IN NIGERIA

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Abstract

The paper focuses on forestry education and forest resources that are available in terms of plants, animals and insects, which are of economic values to the nation. It notes the problems in Nigeria of lack of positive use of these forest resources. It calls for a halt to the dangerous practice. Otherwise, human existence is equally under threat. It notes that, forest and forestry resources technicians could innovatively be utilized for economic rehabilitation and self-reliance. These are by ways of afforestation, developing nurseries, utilization of wood waste in primary and secondary wood waste conversion mills, better conservation of wild lives, and for production of honey, culturally in commercial quality. The paper notes that both individuals and government will have to develop positive attitudes. Our forest and forestry have to *be* rehabilitated as bases for economic rehabilitation and self-reliance.

Introduction

Forestry is used in this, paper to mean both the body responsible for planting and maintaining forest resources for positive uses and its art of managing forest land related resources. Education is the process of imparting and acquiring knowledge for understanding the environment, and to be used for the good of self and the general society. Economic rehabilitation means the process of restoring the deteriorated equipment, infrastructures, institutions and other facilities that are not of function, into their previously useful and functioning state. Self-reliance is the ability of an individual, a community or a nation to be self-sufficient and self-supporting. Forest resources means plant of various descriptions, animals, insects, worms and other living and non-living things that inhabit the forestland.

Importance of Forestry Education Economic Rehabilitation and Self- Reliance

Forestry institutions across the country are monotechnic institutions. They are concerned with forestry education and provide the individual a general and broad based education on forest and related resources. On the other hand, forestry manpower development concerns itself with the individual's acquisition of new manipulative skills, technical knowledge, vocational skills and problem solving attitudes and abilities (Ogundele and Adekola, 2004). The transformation of any society is not based on natural resources as a pivotal agent. It is based on the process of progressive education and manpower development. Forestry manpower development is concerned with providing technical manpower who are skilled in the use of forestry resource for Nigerian development. Ogunfala (.1991) notes that the three main levels of training for technical manpower in Nigeria are vocational, technical and professional.

The vocational education is the lowest level of technical manpower development. At the end of 6 months' course, students would have acquired skills in nursery practice, tree felling, power saw operation, labour management and so on.

Technical education constitutes the principal technical manpower development in this country. Aromolaran (2003) notes that technical education courses are offered at the secondary level as pre-vocational courses and offered at post - secondary school and adult level as vocational courses.

It is designed to prepare students and individuals for employment careers, jobs or occupations requiring technical knowledge and skills.

Professional education is the highest level and is usually in the universities where people are equipped with skills in basic and applied science. Some of the objectives of this level of education contained in the National Policy on Education (Revised. 1998) include:

- (I) The acquisition, development and inculcating of a proper value orientation for survival of the individual and society.

- (2) Development of intellectual capabilities of individuals to understand and appreciate their environment.
- (3) The acquisition of both physical and intellectual skills, which will enable individuals to develop into useful members of the community, and
- (4) The acquisition of objective views of local and extended environment.

Problems Facing Effective Utilization of Technical Manpower

Ogundele and Adekoia (2003) note that the following problems affect technical education and consequently technological development in Nigeria.

- 1) Inadequate supply of science teachers in various schools, colleges and technical institutions.
- 2) Inadequately equipped science laboratories.
- 3) Little interaction between researcher and industry or public service.

Other sets of problems facing forestry manpower development in Nigeria include:

- 1. Lack of comprehensive long-term forestry and land use policy, plans and management.
- 2. Lack of sufficient data on the status of forestry and wildlife resources.
- 3. Sentimental and emotional benefits that trees and wildlife resources are gift of nature requiring little or no human efforts in their conservation and development. The results are that:
 - a) The roles of forest technicians are not appreciated.
 - b) There are limited efforts at forest development and rational approaches to the management of forest resources and development of forest technicians and other personnel.

Oguntala (1991) notes that these problems could be removed by effective communications, by forestry extension services and paying greater attention to all aspects of forestry technical manpower requirement and development. There is also need for more emphasis on vocationally oriented curricula and short-term periods for the acquisition of required skills for technological development.

Importance Demand from Forest Technician for Requirements for Economic Rehabilitation and Self-Reliance

For the purposes of economic rehabilitation, self-reliance in the forestry sub-sector of Nigerian economy, our forestry technicians will have to perform the following functions.

- 1) Establish new forests especially in areas where desertification is a threat to human existence.
Nigeria can borrow a leave from Lybia where the Sahara desert has been turned in some areas to flourishing forest land,
- 2) Management and conservation of our dwindling natural resources, due to destructive exploitation, and on which many populations, in the tropics rely for their survival.
- 3) Utilization of forest resources development of the economic potentials of forests both on the micro and macro basis. This will help to arrest the rural-urban migration.
- 4) Environmental stabilization, this involves checking erosion, extreme climatic conditions, Hoods, desertification pollution, acid rain effect and others.
- 5) Multiple uses of forest resources and the innovative utilization of forest resources.

6) To meet the demands of the above listed functions the roles of our technical forests and professional foresters need to be reviewed. Since they are engaged in several forms of forestry development and management activities, their education is of crucial importance if the various forestry development, land use project for economic rehabilitation and self-reliance programme are to succeed.

Relevance- of Forestry for National Development and Economic Rehabilitation and Self-Reliance

Ogundete and Adekola (2004) note that all continuous process of change has been part of the universe. The role of the forest in protecting watersheds had long been recognized, Its role also includes its tremendous influences upon the climate. This had influenced the production of series of researchers by foresters in order to improve on the standard of the species of trees and medical plants for human well being across the world.

In addition, several various goods and services which people enjoy are obtained from the forest. These include:- timber, wildlife, forages, water, recreation, visual amenities, honey and so on. All these provide some revenue to individuals and the government. They consequently improve the well being and standard of living of many people. They could innovatively be used for the purpose of economic rehabilitation self-reliance in Nigeria,

In addition, the forest glades have always been valued for their grazing. Consequently, across the globe, forest land in valley and mountain regions have provided beautiful grazing land for sheep, cattle and other animals. Therefore, a more innovative management and preservation of our savannah land and forest land areas will make them of tremendous value to our herdsmen. This will in turn boost our desire for economic self-reliance in the provision of beef.

Innovative Utilization of Forest Resources for Economic Rehabilitation and Self-Reliance

It is to be noted that most of Nigeria was covered with forest prior to and in the early part of the last century. As that century progressed, the colonial masters started the exploitation of Nigeria's timber including-rubber. It consequently embarked on the creation of forest reserves in 9% of Nigeria useable landscape. The vegetation of Nigeria changed significantly starting from the middle of the last century. It was due to degradation processes occasioned by human activities. Man found useful products in the forest and started to extract them. Such products include: wildlife, fodder for domesticated animals, plant for firewood, drug, plank, etc.

There are several ways of utilization of the forest resources, which are presently being largely wasted by Nigerians, more innovative such that they could become a central cornerstone in the drive towards Nigeria's economic reconstruction and self-reliance. We provide below some of the uses into which forest resources are put.

Various Uses of Wood

Fishers (1908) and Wenger (1984) exhaustively discussed various types of uses into which forest wood can be put. In this paper, we shall present some of them in outline form and note the relevance of their innovative employment for economic reconstruction and self-reliance. They discussed detailed processes of classifying wood. But our focus here is on the utilization of forest products discussed by them, The uses into which forest plants are put include the following:

lumbering, saw-milling, pulp and paper wood-as some sources of energy also used for various types of domestic and industrial purposes. -

Wood Lumbering

This could be classified into hardwood lumber and softwood lumber. The hardwood lumber can further be regrouped into (1) Factory lumber, here hardwood is graded for cutting into smaller pieces to make furniture or other fabricated products (2) Dimension part, this encompasses three classes of materials: Solid dimension flat stock, Kiln-dried dimension flat stock and Solid dimension squares (3) Finished market products such as flooring, lath, siding, lies, planks, car stock, construction boards, timber, trim, molding, stair treads, and risers.

Softwood lumber is classified for market use by form of manufacture, specie and grade. The

softwood lumber grades can be grouped into two categories: (1) Construction grades which principally apply to lumber expected to function as graded and sized after primary processing (sawing and planing) and (2) Manufacture grades which apply to lumber that will undergo a number of further manufacturing steps and reach the consumer in a significantly different form.

Construction Lumber

This is graded specially for major construction uses intended and little or no further grading occurs until the piece leaves the sawmill. They are in three categories, Stressed-graded, Non-stressed graded and appearance lumber.

Remanufacture Lumber

This is supplied to industrial accessing for cutting into specific smaller sizes, which becomes integral parts of other products. Typical of lumber for second manufacture are the factory grades, industrial clears, box 1 lumber, mulching stock and ladder stock. Factory or shop lumber forms the basic raw materials for making secondary manufacturing operations. Industrial grades are used for cabinet stock, door stock, and other product component such as manufacture of cooling towers, tanks, pipe and similar products, others are molding, ladder, pole, tank and pencil. Stock grading rules delineate the requirement for variety of lumber items oriented to specify consumer product.

Sawmilling

This is the- mechanical process of manufacturing in which logs are converted into rough lumber. By-products are sawdust, slebs, and edgings and trim. Mechanical sawyer controlled sawmills depend on human decisions about how logs are to be broken down at the heading. The sawyer makes decisions regarding the rational position, the sawing, methods and the opening space.. This is the principal method of operation in this country.

The computer - controlled sawing replaces or reduces sawyers decision - making and physical effort. Automated control systems use Jog scanners to measure log diameter, length and mechanical models calculate the sawing solution 'hat will yield highest volume and value. This is an area where innovative use of man and material resources can put Nigeria into relevant competitive position in a globalized economic structure.

Pulp and Paper

- This is closely related to lumbering. Pulp and paper industry provides outlet for a large volume of wood not useable as logs and for species otherwise in small demand. Availability of raw materials, accessibility to the mill and economics, including transportation costs are important in acceptance of the raw materials by a particular mill. Some mills produce only pulp and sell to paper mills. In Nigeria, .the practice is to have .the pulp and paper mills together as in the ease of Nigerian paper mills, Jebba. The truth is that presently, Nigeria has two functional pulp and paper mills so, the country depends on heavy importation of paper products. Momoh (1986J notes that Nigeria imported on the average 139.7 metric tons of paper every year between 1978 and 1984 at an average of 106.5 million naira. As at that time, Nigeria was producing only about 12,000 metric tons of paper per year. This situation has not improved but has deteriorated. There is therefore need for innovative use of our human and material resources to reconstruct those pulp mills that were closed.down due to economic retardation and to build a foundation \viih albrestation as it is being practiced by the Nigerian Paper Mills Pec, Jebba.

1) Wood as a Source of Energy

About half of the wood cut in the world today is used for fuel, mostly in developing countries. Oguntala (1991) notes that 90% of the wood cut in Africa is used as firewood. By constriction, wood provided about 2% of U.S. fuel need in 1978. Wenger (1984) notes that with greater U.S. interest it was a smaller amount. Direct burning of wood occurs when the surface is irradiated so intensely that the temperature is raised to a point of .spontaneous ignition. This is confined to a thin surface layer. There is a product of the process of combustion: gases, vapours or mist. These products become mixed with our own burn.

Wood Fuels

Wood fuels most commonly available for industrial uses are wastes from manufacturing operations, such as planer, shavings and slander from secondary manufacture of plants bark from primary manufacture plants, black liquor, from Kraft pulp mills sawdust, etc.

Charcoal

Charcoal has been and is still an important domestic fuel in Nigeria. It is obtained from fuel wood that is specially treated for the production of charcoal.

We need to cultivate, as a people, a culture of less wastefulness in the use of our forest resources as firewood alone and make more positive use of them for other long lasting domestic and industrial uses in the spirit of economic reconstruction and self-reliance.

Using Forest Resources for Economic Reconstruction and Self-Reliance

There are other industrial usefulness of the forest resources. We present a list of some of them here.

Match Making

Matches are widely used in every home and very little of the domestic demand for them are produced locally the rest are imported. Investing in this area would serve the double purpose of economic rehabilitation and self-reliance.

Poles

' They are used in Nigeria for fence and transmission. They are very important in the economic development of both rural and urban areas. They are of good quality when treated. The treatment of pole is an area that calls for research and appropriate investments for profitable reflex."

Tools and Souvenirs

Tools and souvenirs are made by hand in Nigeria. Specific industry for the iliaking of these tools and souvenirs could be established to further boost the country's economic rehabilitation drive.

Drugs and Related Industries

Drugs for nutritious and curative purposes are widely used all over Nigeria. Their future demands will keep on increasing. Only a small fraction of the domestic demands are produced iocaily. There are abundant natural herbs that could be used to produce needed drug. Nigeria's drive for economic rehabilitation and self-reliance must focus on this area that is highly profitable.

Nigeria paper mills, Jebba has a plantation programme at present. There is urgent need for deliberate policy and plan to recreate a natural environment for the future. This will also serve the dual purpose of economic rehabilitation and self-reliance.

In addition, considerable quantities of wood wastes are produced in the primary and secondary wood conversion mills. Some of these are in the forms of shorts, mis-manufacture, and wood species that have numerous defects. Many of the wood wastes can innovatively find good uses through adhesive bounding of small piece of contrasting colours to produce novelty Hems. Such items are already finding markets both locally and internationally. They have the potentials of substituting the traditional hand carved wood. They also lend themselves to giving rise to viable small-scale industries. This is another area that can be usefully employed for economic rehabilitation and self-reliance.

Summary

The paper discusses some of the technicalities of the uses of wood and wood waste recycling processes. It should be noted that we need to prepare for the future. This will involve (1) Training and retracing of our forest technicians for the tasks ahead (2) School of forestry to become more community oriented (3) Need for educating more women foresters, women are the largest users of wood (4) Developing relevant curriculum based on our manpower needs (5) Need for training in the areas of agro-forestry and forest extension.

Conclusion

It has been shown that forestry education and forest resources have great potentials in helping Nigeria's economic rehabilitation and self-reliance. Emphasis will be on personnel development as outlined above. It will also require positive change in our attitude as a people to investing in long enduring areas rather than just making quick gains of short-term duration. Above all, it calls for innovative utilization of both forest personnel, skills and forest resources as bases for economic rehabilitation and self-reliance.

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