

A Building Materials Policy for Nigeria: An Economic and Technological Imperative

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Introduction

The continued escalation in the cost of building materials in Nigeria underscores the economic and technological expediency of the enunciation of a building materials policy. A building materials policy for Nigeria will be a blueprint that formulates, articulates and presents policy guidelines for the production, adaptation and diffusion of technologies on building materials. As a palliative, perhaps, it will also achieve cost reduction in the prices of building materials. Hence the urgency of the need for the formulation and enunciation of a building materials policy for Nigeria is, at once, an economic and technological imperative – to achieve cost reduction in the prices of building materials and to innovate and adapt appropriate technologies for building materials production.

Policy Development for Building Materials in Nigeria: A Conceptual Framework.

A conceptual framework for the development of a building materials policy for Nigeria will be focused on the concept of paradigm and the additional conceptual basis provided by the enunciations of National Housing Policy. Through the concept of paradigm, a society searches for solutions to the problems it faces, and seeks the solutions through the medium of a certain accepted pattern of knowledge and instruments referred to as a paradigm.

The additional conceptual basis provided by Nigeria's National Housing Policy is evident in its enunciations in which it encourages research into and the promotion of the use of locally-produced building materials as a means of reducing housing costs, and the development of appropriate technology to facilitate production and use of local building materials. Hence, the core of a building materials policy for Nigeria can be outlined as the processes for the maximization of the production of building materials at affordable costs or prices through the application of appropriate technologies and the production of building materials from locally-sourced materials.

The Rationale for Appropriate Technologies for Building Materials Production in Nigeria.

What exactly is "Appropriate Technology?" Definitions and confusion abound and there probably is no widely accepted definition. Perhaps, the best way to define it is by some examples. Nicholas Jequier of the Organization for Economic Co-operation and Development has edited a book titled "Appropriate Technology: Problems and Promises", in which he described the subject amply. The singles out a solar pump developed by a French firm in co-operation with the University of Dakar as a good example of appropriate technology. The pump, which is being introduced on a large scale in Mexico, uses solar energy to provide villagers with an essential but scare commodity – water. Although technically sophisticated, it blends well with the social environment, requires virtually no maintenance, and seems to have potentially a long working life.

In 1975, the U.S. Agency for International Development (USAID) was authorized to create a new program in the field of intermediate technology. Up to \$120 million was made available for the three-year period covering fiscal years 1976 to 1978 to expand the efforts of the private sector in this field.

A U.S. House of Representatives report sets forth the following rationale for intermediate or, as it is now more commonly referred to, appropriate technology: "The experience of more than a quarter century of development assistance programs overseas has clearly demonstrated that much of the technology used in the United States and other industrialized countries is not well-suited to the economics of developing countries. It is too big, it is too expensive, and it does not create the jobs needed to absorb rapidly expanding labour forces in countries that already have an abundance of labour. It is not appropriate for use on the very small forms and in the very small business enterprises that make up much of the economic activity in the developing world.

If the poor are to participate in development...they must have access to tools and machines that are suited to labour-intensive production methods and fit their small farms, small business and small incomes. They must have access to technology that is neither so primitive that it offers no escape from low production and low income nor so highly sophisticated that it is out of reach for poor people and ultimately uneconomic for poor countries – in short, intermediate technology."

This increased appropriate technology efforts involves the development and dissemination of technologies appropriate for developing countries in the areas of agriculture and rural development, small business enterprise, energy and also the production of building materials in Nigeria. Also called for, are the identification, design and adaptation from existing designs of appropriately-scaled, labour-intensive technology, as well as policies and

institutions directly related to their use. Field-testing of intermediate technology, establishment of information centres and aid for new small businesses in the area of building materials manufacturing have economic and technological significance.

Building an Indigenous Technology Base for Building Materials Production:

Technological research and development in many developing countries is characterized by low manpower pools and low budgets compared to those in industrialized countries. In 1972, Mexico had 7.4 scientists and engineers per 100,000 population, compared with 500 to 600 in the United States, and in the then Soviet Union.

Lack of an adequate scientific and technological base has had profound effects on all facets of development, building materials development and production inclusive. In many Latin American countries, more than twice as much money is spent for foreign technology, in the form of licences and royalty payments, than on technological research and development (R&D) within the country.

Furthermore, when foreign technology is licensed, the licensor often keeps control of the technology. A Latin American firm may be able to manufacture its product for a limited period, but it does not get the technical knowledge it needs to develop new products or processes. These are elements of what has been termed “technological dependence.”

In Nigeria there are corporate ventures in building materials manufacturing in the area of longspan aluminum sheet that have attained a high degree of technological independence in terms of raw material inputs and manpower utilization.

The Creation of the Enabling Environment for the Implementation of a Building Materials Policy for Nigeria.

The enabling environment for the implementation of a building materials policy for Nigeria will involve the participation of institutional frameworks such as agencies at the forefront of technological research and development of building materials in Nigeria, like the Nigerian Building and Road Research Institute. Building Research in the areas of research and development of locally-sourced building materials in Nigeria should be a major focus of their activities if the ideals of a building materials policy for Nigeria will be realized in the nearest future. The issues of the enactment of appropriate statutory regulations and empowerment of the institutional frameworks in terms of financial, budgetary allocations from government are also crucial to the achievement of the goals of a building materials policy for Nigeria.

The Research and Development of Locally-sourced Building Materials in Nigeria.

With the increasing cost of building materials in Nigeria as well as increasing cost of importation of these materials from abroad, the need for increased research and development of locally-sourced building raw materials processed as building material using appropriate technology cannot be overemphasized. This will reduce cost and the capital flight of our hard-earned foreign exchange that could be utilized in other sectors of the economy. In this regard, the issues of identification, processing of locally-sourced building raw materials and the maintenance of appropriate standards in their conversion to building materials should be addressed.

Policy Recommendations for a Building Materials Policy for Nigeria:

Towards the sustainability of a dynamic and purposeful building materials industry in Nigeria, the following attributes for a building materials policy are recommended:

- (a) Adaptation and innovation in appropriate technologies for building materials production.
- (b) A holistic approach – a comprehensive approach to all the issues involved in building materials research and development.
- (c) A futuristic approach - that is capable of forecasting and future studies on building materials development in Nigeria.

For example, the economic scenario of the demand and supply of cement in Nigeria is an aspect of building materials situation that calls for adequate future planning approaches. The cost of Portland cement, for instance, is still not within the reach of the average Nigerian due to high cost of foreign exchange involved in the importation of the product into Nigeria and low production capacity of our local cement industries. In order to ameliorate the situation and make cement cheap and affordable in Nigeria, it is suggested that government and the stakeholders in the building and construction industry should make policy statements towards economic changes in this direction as follows:

- (1) Encourage the establishment of mini-cement factories at cottage - level in local government areas where the raw materials for the production of cement are abundant.
- (2) Discourage the importation of cement by government and government agencies
- (3) Encourage the Nigerian Building and Road Research Institute (NBRI) and Universities engaged in building research to intensify their research and development for alternatives to cement with trials on

bauxite waste and some premium clay that exist in Nigeria.

Conclusion

In Nigeria, as in most developing countries, the level of building materials development and production has direct impact on the affordability and accessibility to decent housing in both the urban and rural areas. The challenge of reduction of the prices of building materials in the face of low income per capita, high poverty level, low earning capacity and high consumption patterns is both an economic and technological imperative – to enunciate relevant economic policies and the application of appropriate technologies for building materials production in Nigeria. Hence, focus on research and development on a very large scale, capacity building and production of building materials from locally-sourced raw materials will facilitate the implementation of the blueprint of a building materials policy for Nigeria.

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