

# USE OF MAPS FOR EVALUATING THE NIGERIA'S ECONOMIC POTENTIALS FOR SUSTAINABLE DEVELOPMENT

**\*Paul Onuche**

**\*\*Terwase Shabu**

*Department of Geography*

*Benue State University, Makurdi, Nigeria*

*\*Email: p\_onuche@yahoo.com*

*\*\*Email: terwasesuccess@yahoo.com*

## ABSTRACT

*As an edifice, development is most often built on social, economic, cultural, technological and industrial pillars. Literatures have shown that a country's growth, over a reasonably long period of time, is ultimately determined by the accumulation of productive resources, technological progress and efficiency with which such existing stock of resources are utilized. The fact that Nigeria has abundant material and human resources is self evident. Yet the slow pace of economic development of the country is rather puzzling. Mention have not been made of how this veritable resources are been taped or recognize among other resources contributing to national and sustainable development. The paper sets out to identify how the potentials of Nigeria's Economic Atlas can be produced, to enhance vital information access for sustain development and in contributing to increased Gross National Products (GNP), Provides useful data base for resource inventory and planning, resource awareness, investor's opportunity, contribution in educational development and employment opportunities. The study observed that, planning and implementation of the plan, proper utilization of domestic policies and institution, and repositioning of non oil sector constitute the road map to sustainable development of Nigeria.*

**Keywords:** *Atlas, Economic Resources, Non oil sector, Development.*

## INTRODUCTION

Presenting information in graphic form has advantages. Graphic expression has a peculiar capacity to communicate facts and ideas directly, and indirectly, outspokenly to the fact seekers, subtly to the reader who probes further, and also facilitates the comparison of the presence, absence, or degree of intensities of a particular variable or variables in different regions of the world and country. It also brings into sharp focus certain features of a variable in a manner that other forms of presentation cannot achieve (Cappon, 1976).

Customarily, maps in an atlas show the spatial distribution of particular variables or a set of related variables in such a way as to transmit not just a mass of facts, but a useful body of knowledge which can be applied to help solve problems of human development. The information resource therefore becomes a veritable planning tool. Economic atlas is an atlas that contains maps of economic resources of a state, region or a country. Economic atlas is a unique atlas. It is characterized by information

in such a manner as to influence planning for development. It contains maps which present great variety of distribution of factors which can be identified and which are thought to be related to the general level of economic performance of any society. The maps present a series of data in highly visible forms, which general social scientist often overlook or the significance of which they underestimate (Olayinka, 1987). The compilation of this atlas has revolutionized the way economists look at the question of development especially as it has brought into focus the regional disparities and inequalities in world development. Development as defined by Chambers New School Dictionary is work done on studying or improving on previous or basic models, design or techniques - efforts to improve a current situation. Thus in this study "development" shall be construed as method, mechanism put together for the purpose of improving the performance of a model or ventures.

Prior to the current global recession, Nigeria has been in the throes of poverty. The oil boom of the seventies weaned Nigeria from all non oil sector of the economy to highly oil dependent economy. Unarguably, Nigeria has vast resources and potentials of non oil sector of the economy which have neither been fully explored nor exploited for National development. One of such untapped non oil sectors is the Nigeria economic atlas which is capable of spinning the economy of the country. Having a brief glimpse of the past, it is evident that far from this present situation being our natural and inevitable fate, Nigerians have for centuries been engaged in resourceful, relentless and fruitful efforts, as hunters, farmers, artisans, fishermen, herders, merchants, etc., to use the bounty resources nature has endowed this country with, to produce, sustain and develop themselves. The mining, smelting and working of metals, manufacturing of hoes, cutlasses and other implements, arable and pastoral agriculture, the production of looms and making of textiles, were all parts of economies which were generally self sustaining and self propelling.

The abundant human, vegetal, land, minerals, water, energy and other resources are sufficient to ensure rapid economic development and good living condition for all our people, as the second National development plan of 1970 - 74 observed, the country is fortunate in having the resources/potentials in men, materials and money to lay a solid foundation for a socio-economic revolution of the country (CBN, 2000). The aim of this study is to identify the potentials which Nigeria economic atlas can offer for sustainable development to rescue the country from persistent economic crisis and recession.

## **EVOLUTION OF ATLAS MAPPING IN NIGERIA**

The history of atlas mapping in Nigeria started in the late thirties. By 1940, maps of Nigeria covering subjects such as agriculture, administration, health, communication, domestic trades, forests, economics, isogonics, temperature, aerographical, population, and rainfall had been produced. The initial objective was to issue from time to time atlas maps at scale 1:3,000,000 which if well kept could then be held in a loose folder. But atlas map series is not topographical map series.

Atlas maps are thematic maps of geographical phenomena that change frequently. By 1963, this fact was realized as the Federal surveys department itself did not find the atlas map up to date and suitable enough to enclose in a folder and call it the National Atlas. It was also observed, that compilation of atlas is not the work of Surveyors. An Atlas Cartography section was then created at the Federal Survey Department, and geographers and other social and physical scientists were invited to take part in the compilation of the maps. Even then by the middle of the 1970's, political changes had necessitated considerable changes in the contents of the maps. These changes were disruptive enough to provoke the temptation of publishing the first edition of the atlas containing maps showing the twelve state structures when actually at the time of printing of the map, there were nineteen states. The agony of missing the publication of the atlas before the creation of nineteen states shows the true nature of thematic maps. The facts that some seventy maps had to be published together even though the first one was produced several years back shows the uniqueness of atlas cartography (Dixon, 2000).

After 1963, proper planning was evolved and the sheets published before then were overhauled, redrawn or discarded. The contents of the maps were mainly determined by geographers who were requested to organized sketch map, data and text for cartographic production and to edit maps and text after the proofs had been provided by the atlas section of the Federal Surveys. Revision of the atlas started barely two years after the launching of the atlas which took place on April 3rd, 1981. Fig 1-3 shows the spread of this Nigeria Economic Atlas (Gutsell, 1979).

### **POTENTIALS OF NIGERIA'S ECONOMIC ATLAS**

***Atlas Use as data base for Resources Inventory and Planning:*** Atlas is a compendium of information. With settlement came the thirst for knowledge about resources - about land for grazing and cropping and about timber and minerals - and for an understanding of problems due to peculiarities of the climate and soils. Much information in all these fields of interests leads themselves to portrayal on maps. In some instances, it would be difficult, if not impossible, to gain an understanding of distributional patterns and their complex relationship without appropriate maps. The atlas has been produced primarily to help meet the demand for authentic geographic information on these many facets. The communication of vital information is essential to development planning (Adalemola, 1983).

Figure1, Nigeria economic atlas is an inventory of mineral resources. It reveals the pattern and regional disparities in resource endowment within the country. This can form the basis for recommendation on specific kind of developmental options to fit for specific region or state based on their resources strengths. A cursory look at all Nigeria economic atlases will certainly convince one about the amount of useful information on the resources of the land. Such wealth of information becomes an invaluable resource in the hands of the nation's planners for development. An example is the great successes accrued from Agricultural revolution in Great Britain and distribution of blocks of land in USA (Hartshorn and Alexander, 2000).

***Increase Gross National Products (GNP):*** In developed country's economy, maps in whatever forms/types, contribute actively to the economy. This is true from the existence of large number of dedicated map publishing houses- in England, Germany, USA, China, Australia, Europe etc. This is a proof of cartographic hypothesis that the most mapped areas are the most developed places (GIS Development, 2010). This implies that the map, Nigeria's economic atlas, is an important tool/component of societal development. Apart from disseminating its contents to users, the income from the sale of the atlas in national and international markets will go a long way to increase the nation's GNP. An example is the publication on “Obama boost U.S economy from the sale of atlas 2010”.

***Resource Awareness:*** Information is a good source for planning, research and organizational efficiency. Kantumoya (1992) stresses that people will not be able to get their dues as citizens of present day society unless they have a continued access to information which will guide them through and where necessary they advise them to translate that information into effective actions and unless they get their dues, they are unlikely to recognize the reciprocal obligation that all citizens have to the society. Also Togyo (2003) says that, Nigeria is endowed with enormous human and natural resources and what is required is availing the citizenry with appropriate information that will help promote their skills for a better tomorrow of the country. Nwosu (1995) observes that a country's wealth and power are today largely determined by the extent of its scientific knowledge.

When a country is developing, it must not only know the size of its populations but also how they are functionally organized in the villages, town and cities. It must know the distribution of its potential resources and the relevant spatial organization that can efficiently transform them into national income. Nigeria economic atlas endowed us with enormous information about our resources which when properly utilized will propel and sustain our development. This can be achieved by planning and proper utilization of domestic policies and institution to manage our resources (Ginaburg, 1967). Examples of such knowledge/information as contained in the atlas are looked into critically below:

***Agriculture:*** Nigeria has a wealth of agricultural resources. There is a vast area of arable land on which almost all tropical crops could be grown on an account of varied climatic conditions (Figure 2). Statistics shows that out of the country's total land area of 231 millions acres, just 79.5 millions or roughly a third constitutes arable land and land under permanent crops. Forest and permanent pastures cover about 56 percent of land area. Since only about 10 percent comes under forest reserves, and allowing about 15 percent for permanent pastures, it follows that about 31 percent of the land constitute agricultural land. With 9 percent of the area presently not used for any specific purpose, the percentage of the land that can be available for agricultural purposes goes up to 40 per cent- that is about 92.5 million acres (CBN, 2005). The savannah lands of Nigeria and millions of native cattle, goats and sheep present attractive potentials for improved livestock production. The country's main rivers and it tributaries also have great potentials for fishing.

Forestry development in tropics is one of the corner stones of any sound agricultural program as it satisfies three basic national requirements, namely, (a) prevention of desertification, erosion and environmental degradation, thereby protecting the natural resources of the country; (b) the provision of timber for the country's construction and furniture industries and fruits for its food beverage industries, on a continuous basis, thereby saving foreign exchange and achieving self-reliance in this sub sector of the economy, and (c) continuous provision of renewable sources of energy and other wood-based derivatives to our rural population, one of the pillars on which the rural economy of most Nigeria has been built for thousands of years has been breeding and use of livestock, made up of cattle, goats, sheep, poultry and camel. These have served and continue to serve, not only as source of essential food items and manure, but also as major commodities of domestic trade. The trade in cattle between the sahel and forest region is one of the functions of integration in the Nigeria economy. The manure from the livestock is perhaps the single most crucial, domestically produced input into Nigeria peasant agriculture. These natural endowments portrayed in the atlas should not be unproductive. Its maximum utilization can enhance the economy (Figure 3).

**Energy:** Nigeria is blessed with abundant sources of energy ranging from hydro-electricity, hydro-carbon, coal, uranium, solar energy and other renewable energy sources. Figure 1. In spite of this, there is a serious shortage of energy in the national economy. Reason being that since 1958, our energy policy has only involved oil for export and the flaring of natural gas. The consequence of this is frequent power failure, desert encroachment and drought. It is this situation which promotes the importation of basic materials we could be making here, as well as the import of electric generators at the expense of our economy. The energy sector is characterized by waste. Apart from hydro-electricity and hydrocarbon, uranium, coal and solar energy have been redundant. Since energy is a basic input in production, it is necessary that we confront the energy and related problems blocking the development of our economy. The energy problems in the country can be overcome by harnessing the endowed energy in the country.

**Industry:** By industrialization of a country, we mean the process of developing the capacity of the country to master and locate, within its borders, the whole industrial production process, production of raw material, production of intermediate product for other industries, fabrication of the machines and tools required for manufacture of the desired products and other machines and tools, skills to operate, maintain and reconstruct the machines and tools, skill to manage factories and to organize the production process. Thus from the above definition, the question as to whether Nigeria is industrializing or not, should be answered from the point of view of whether, or not the above is taking place. The Nigeria manufacturing sector has grown from a small number of assembly and processing plants at independence, to a larger number now on ground, but its actual contribution to the productivity of the economy, as a whole remain very low (Ajiyi, 2007). Nigeria economic atlas and statistics have shown

that Nigeria is blessed with number of potential natural resources for self sustaining industrialization. Hence, priority should be given to the development and integration of three sub-sectors of capital goods industries, basic material industries and consumer goods industries of the country.

Capital goods industries are industries that produce the tools of industrialization, basically machine tools. Machine tools are presses, drills and lathes, which are used to produce them and other industrial equipments such as transport and communication equipment, agricultural machines, textiles looms, chemical complexes and mills. The basic material industries are the industries that transform raw materials into usable, intermediate input for subsequent utilization by other industries, for example, the chemical industry produces acids, caustic soda, dyes, chlorines, sodium carbonate, for use by the pharmaceutical, textile, metallurgical and other industries. While consumer goods industries are those using the basic materials and the raw material produced by agriculture, live stock and forest base activities. Such industries are based on the local resources endowments and needs. Examples are agro- industries which involved in the parboiling and milling paddy into rice, milling wheat and maize into flour and semolina, making industrial starch, fruits and vegetable processing and preservation, making of shoes from leather etc.

***Contribution in Educational Developments:*** Nigeria economic atlas contains the available resources within its region/boundary. It provides a body of useful knowledge about resource distribution, types of available resources, and location. The economic atlas form the bedrock of studies in our educational institution both secondary and higher schools of learning. Atlas took the form of cataloguing of and classifying of geographical phenomenon, therefore are conducted in understanding and explaining factors influencing their distribution, economic importance, and mining and exploration method for sustainable development.

***Investor's Opportunities:*** The nation's most natural resources remain largely untapped/un-exploited. Given current efforts to diversify the national economy among others measures, exploiting the nations verse resources, Nigeria atlas of economic atlas serve as authentic information/tools to foreign and indigenous investors that wants to invest in the nations natural resources. Their positive response to invest will contribute a lot to the growth of the economy.

***Employment Opportunity:*** In developed countries, map/atlas production is considered a lucrative business unlike what is obtainable in the country. However, some indigenous book publishing firms, example Macmillan Educational Limited has produced school atlas, wall atlas and Nigeria atlas which are presently in the markets. The Nigeria mapping company, Longman Nigeria Plc (produced an atlas of Nigeria and the World) and several professionals like, surveyors, photogrametrists, lithographers and cartographers are involved directly or indirectly in map/ atlas production. The production and marketing of these products involved a lot of hands, thereby providing employment opportunity.

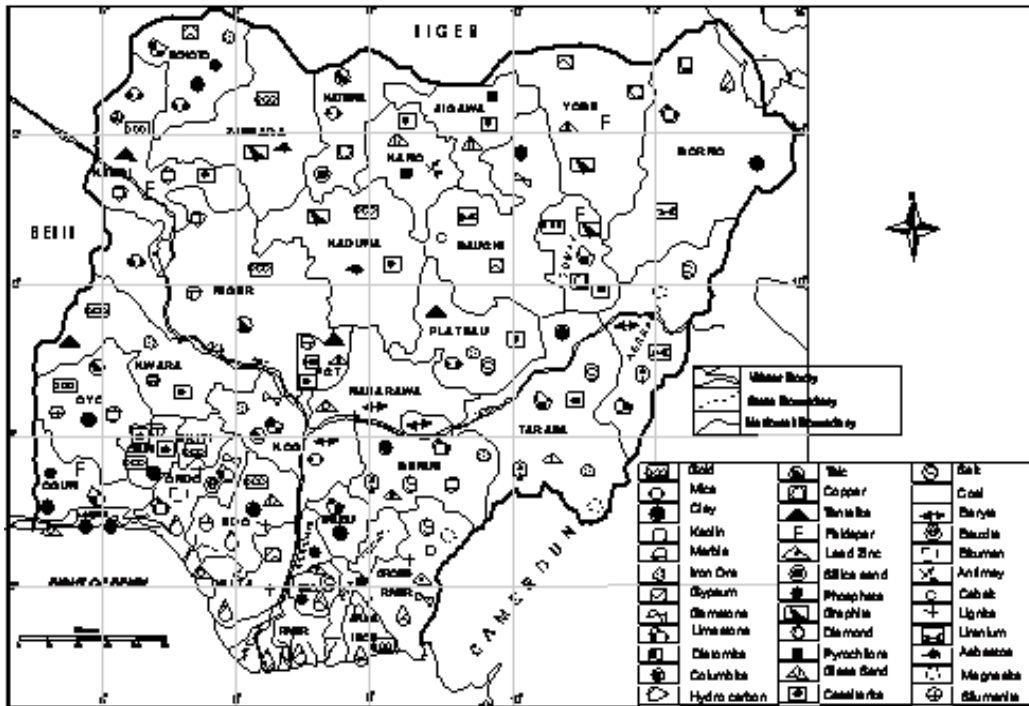


Fig 1. Map of Nigeria Showing the Mineral Resources Location

Source: Longman School Atlas, 2003

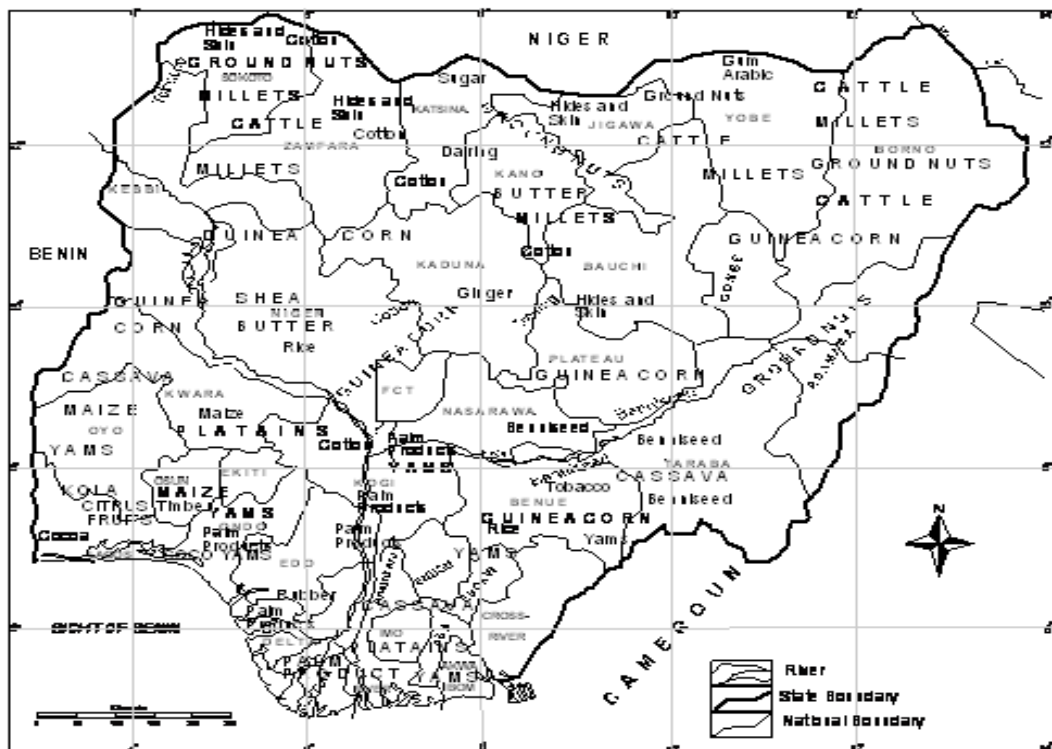
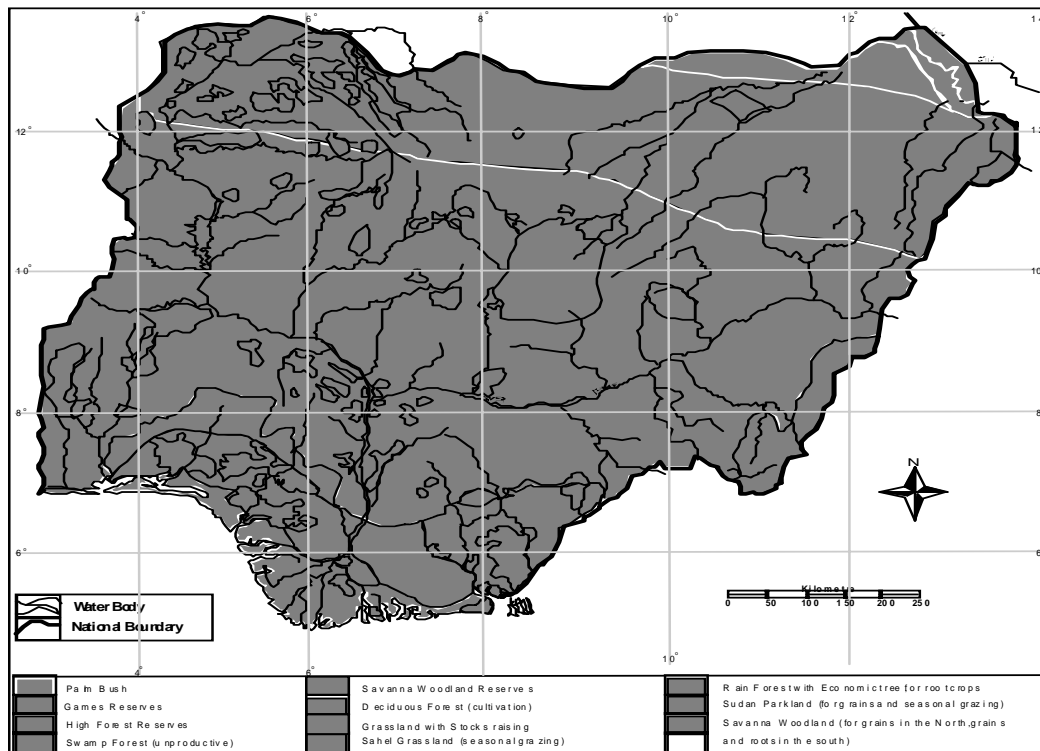


Fig 2: Nigeria Showing Food Crops.

Source: Modern School Atlas.



**Fig3:** Map of Nigeria Showing Vegetation and Drainage Distribution. Source: Modern School Atlas.

### CONCLUSION AND RECOMMENDATIONS

Nigeria is endowed with enormous resources as portrayed on the atlas. These must be properly utilized by forming domestic policies and institutions that will transform our economy. Undoubtedly, non oil sector is an active sector of Nigeria's economy. The potentials possessed by Nigeria's economic atlas are substantial in enhancing sustainable development of the country. Adoption of proper management techniques is crucial for enhancement and sustainable development. There is need to consciously plan for rational utilization of the available resources, better production system, and resource management. Depending on oil and gas as the main nations economy proves inadequate to meet the present needs of Nigeria's ever increasing population. Harnessing the potentials of Nigeria's economic atlas will go along way in sustainable development. Therefore, the following are recommended:

**Crops:** The most important and urgent action to be taken to revitalize Nigeria agriculture is emancipating the peasant farmers, and other rural producers, and giving them control over the productive resources- basically land which should be controlled by those who live and work on it. This should be accompanied by a nation wide mass literacy campaign to make every adult farmer literate and numerate in order to raise their consciousness and their agricultural, accounting and other skills. The activities of agricultural development project (ADP) should be visited/called back, be streamlined and coordinated to meet the input, extension and credit need of the village agricultural committees.



**Livestock:** Nomadic is the central issue and its transformation should be seen as a question of national emergency. While nomadic lasts, the country should establish and manage network of pastures fully equipped with watering points and veterinary clinics. The areas demarcated should be fully developed to encourage nomads to settle down near these permanent pasture lands.

**Forestry:** All existing forestry reserves should be properly demarcated, reforested, protected and developed. A massive popular campaign on the need for reforestation should be launched involving the village councils and the mass literacy campaign units. It should promote the conversion of cooking and heating facilities in the urban and rural areas from wood fuel to electricity, kerosene, coal, natural gas and biogas. In order to promote the growing of timber plantation and fruit tree orchards, a total ban should be placed on the importation of all types of furniture and tinned fruits, concentrates, extracts and all the other such ingredients for the food beverages industries. All future expansion of the brewery, soft drink and beverage industries should be based on domestic fruits and ingredients; with the breweries required to invest a fixed proportion of their profits into the production of the raw materials.

Generally, government should embark on new agricultural scheme of training "Potential farmers" where farmers and youth are trained on the various techniques associated with agriculture. In other words, they grew up as trained and practicing farmers such that a change to new profession will be difficult. Government should also be ready to support them with loans to establish their farms. This will give room for self employment and checkmate rural urban drifts.

**Hydrocarbon:** Instead of mining crude oil for export, our refinery facilities should be expanded to process crude oil for the country's consumption of all petroleum products especially with the view to meeting the requirements of the petrochemical industry, the development of which, like the steel complex, is fundamental for our industrial and agricultural take off. Therefore, since oil had been developed largely to earn foreign exchange such revenue should be used to improve the crude oil processing capability of the country. This will no doubt lead to the reduction in crude oil export, but the country's export on finished products derived from oil will increase.

**Renewable Energy:** Nigeria has great potentials for renewable energy. Being a tropical country, Nigeria is well endowed with solar and biomass resources which are well suited to the energy needs of the rural areas. The rural sector is faced with lack, and or the high cost of gas, kerosene and coal. The national energy policy should adequately assign a role for meeting the energy requirements of the rural to renewable energy. Such a policy should also take into consideration, the wide application of renewable resources even in the urban centers as part of our attempt to minimize waste of oil gas. To pursue the objective of self-sustaining industrialization, we must base our choice on production of basic materials required by our population such as food, clothing, drugs, educational materials, transport, communication, the production of tools and equipments for agricultural production, and most importantly the production of machines and tools for the production of other machines..

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