International Journal of Political Science (IJPS)
Volume 4, Issue 4, 2018, PP 22-31
ISSN 2454-9452
http://dx.doi.org/10.20431/2454-9452.0404004
www.arcjournals.org

Science, Technology and Global Problems: Views from the Developing World

Sunday Esoso Nsed Ebaye- Ph.D

Peace & Conflict Resolution Studies Unit, Centre For Generalstudies, Cross River University Of Technology, Calabar , Nigeria

Corresponding Author:** ***Sunday Esoso Nsed Ebaye, *Peace & Conflict Resolution Studies Unit, Centre For Generalstudies, Cross River University Of Technology, Calabar , Nigeria*

Abstract: *Science, Technology & Global Problems: views from the developing world, presents the views of the developing countries focused on the role of science & technology in 3rd world development.*

Though there are significant differences between strategies of development relevant to each State, rapid industrialization and improvement of the lot of the poor, redistribution of wealth and increased participation in decision making, are considered universal strategies. The work advocates for each nation to acquire the capability to formulate& choose strategies easier to relate development to its own culture.The author concluded that deficiencies such as isolation of the scientific community bydeveloping nations, lack of scientific collaborations & representation on international scientific bodies, can be rectified, if suitable avenues for interactions are provided. Almost four decades of its publication, the book remains relevant in the place of science & technology inthe 3rd world development.

INTRODUCTION

The book; Science, Technology & Global Problems: Views from the Developing World, by S. Radhakrishna (eds) (1980), and published by Pergamon press, Oxford, New York, contains ten sections, an over view, and the strategies for development.

The concept of development was considered to inevitably reflect the state of mind, the cultural traditions and backgrounds and the social environment of the person making the statement. It is use to refer to a happy and contented society. The group argued that for a country to be developed, such a country should increate it gross national product (GNP). If the average wealth of the country were to be raised, then there would be no problem in raising the general standard of living of the people.

As a consequence of the Breton Woods conference of 1944, the new international economic order had the objective of bridging the gap and possibly removing the disparities between the developed and developing countries. These disparities exist because of the better infrastructure that is prevalent in the developed countries that is capable of sustaining a rapid process of development. It was noted that such inevitable disparities existed not only between nations, but even within the nations, sections of the society; and even within smaller communities. It was therefore thought reasonable to provide a minimum basic needs standard of development strategy for the people.

While the main aim of development strategies in the past, was to obtain maximum growth, and sometimes ignoring the principles of social equalities and justices, the basic need strategy requires that any developmental planning must include the provision of the minimum amount of requirement for the family. Such as food, clothing, housing, health, education, and employment. However, some scholars argued that the prime objective should be to meet the minimum needs of the largest number of people rather than over all development - in terms of GNP. These scholars therefore called for such equitable basic needs goals as 65 years or more life expectancy, 75% literacy rate, and infant mortality of 50 or less per thousand births (Timbergen, 1976). Though these goals far exceed the existing conditions, it was believed that if the developed countries would reach or exceeds an aid level of ½ to 1% of their GNP, if some portion of the aid granted to the middle income countries were redirected to the low income countries, and if the increase were earmarked for basic needs, then such goals can be met with ease.

The way to attain these is to adopt a proper mix of development policies which will at least redistribute appropriately the increments of capital formation. The committee concluded that the most important factors that could contribute to development include the level of science education in the country, tackling the large population densities in most of the developing countries, and a complete commitment of the individual members of the community. It noted that deep rooted inhibitions against the use of modern sciences and technology and grave misconceptions about what science and technology can do for a country can impede development enormously.

> *Any development indicator that is used to measure development must in some sense reflect the general well-being of the people of a country as a whole. An index, not capable of doing this, would be an unreal indicator (p17).*

Other indicators include communication, number of telephones, automobiles and the physical quality of life index (PQLI). It is however probably much more meaningful and appropriate for every developing country to set for itself a realistic goal and identify clearly a set of basic human needs. The concept of development in which reaching a minimum goal is the aim, without concern of a relative position in the race, would lead us on a more appropriate path towards development.

The basic needs of the developing countries are mostly oriented towards the needs of the educational minority. This educated minority being in a position of authority make it appear as if their needs are truly representative of the needs of the whole country. Just as the developing countries are crying out loudly against the imposition on them of ideas of the more advanced countries, the poorest sections of people in a country do have a genuine grievance against this class of intelligentsia who are monopolizing the planning in the country. Development strategies should evolved in coordination with social scientists Science and technology need to be interlinked with cultural traditions. Development should be overall in character, and not leave behind any sector. In order to reach the developmental goals that a country has set itself, it has to adopt appropriate approaches, keeping in mind the current state of development and the available resources.

Under science education, the book expressed that development is linked with the quality of education in general, and science education in particular. He associated the developing countries with abject poverty and mass illiteracy, and emphasized the need for education as each generation is built on the accumulated experience and wisdom of the previous generation, and this wisdom is shared through education. Underdevelopment arises because of lack of knowledge of the proper and profitable utilization of available resources to increase the material wealth of the people. In other words, absence of proper education maybe identified as the major reason for the lack of development. The author advocated for science and technology education as this will lead to mass production and an industrial culture, and is also at the root of the material progress of humanity. Science education strengthens the commitment of man to the quest for truth and the spirit of enquiry and experimentation. It loosens the hold of dogmatism and fanaticism and acts as a powerful dispeller of fear and superstition, or fatalism and passive resignation.

The author posited that science education helps in overcoming ignorance, superstition and poverty. Without indigenous science and technology, the resources of a nation cannot be organized for industrial expansion.

In the developing countries, technical skills have to be deliberately acquired in the schools. Development of technical skills and integration of technology with science education are very important in the context of development. The ultimate aim of science education should be the development of sensible and sensitive human being, informed and competent in the subjects and the methods of science, and possessing a sense of social responsibility. For the attainment of a massive science education program, there must be a dynamic curricula and the development of textbooks and other learning materials, and army of well trained teachers, large classrooms with basic amenities and laboratories with sufficient quantity of inexpensive equipments. There must also be a system of tests and examination, with a continual assessment system where the assessment is used to facilitate learning and not as an arbitrary barrier or as a means of classifying students. There is therefore a dynamic need for both qualitative and quantitative changes in the science education system.

We need an imaginative and viable scheme by which the learning of science and technology take place more at the action points or work spots on the farms, homes, fields, industries, etc. The fundamental idea of basic education is learning through work rather than the policy of mixing learning

and work or introducing work experience as part of education. Any reform project in science education should include the teacher's training and make him feel at home with the teaching materials. Adaptation of textbooks is better than adoption and the language and examples used in textbooks have to be understandable and meaningful in the social and cultural milieu for which they were written. Again, integrated science teaching, where science is naturally introduced to children, without ever labeling any of their activities as physics, chemistry, biology etc. It consist of a dynamic approach in which the concepts and principles of science are presented in such a way as to present a unified picture of scientific thought and avoid premature/undue stress on the distinctions between various disciplines. This will make for coordination and separation of scientific disciplines. A complete integration at the primary and secondary levels and complete separation at the graduate level. With regards to teaching aid, the use of modern educational technology will enhance teaching efficiency of the teacher and learning efficiency of the student. The role of educational technology in science education is that of providing active learning and industrialized instruction. Most schools in the developing countries are devoid of even the simplest of teaching aids like slide projectors and other materials. Planners should realize that science and technology are relevant to the priorities for social and economic development such as improvement of food supplies and health services, the preservation and rational utilization of natural resources and a concern for a pollution free environment. The developing countries should aim at preparing intelligent technicians with just sufficient academic background but with ample technical skill in different specific areas and with a sense of interest in manual work. Only improved status and recognition of technicians will divert intelligent youngsters to technical jobs which actually play an important part in the overall development of the country. The book argued that the industry has a social obligation to help train the students, as scientific knowledge is developing at such a rapid rate that our trained personnel need to keep up in order to continue to be effective. This require non forma continuing education program for retraining of specialists. For this purpose, scholarships, fellowships and grants for continuous training in teaching and research, and participation in international seminars should be forth coming in easier terms and conditions. Inter university interaction will benefit the developing countries by mutual exchanges of their experiences.

In the third section, the author made a discourse on scientific research with a view to looking at the role of scientific research in development processes. He opined that not all developing countries need to possess capabilities in all aspects of scientific research, and that it is not practical to aim to bridge the gap in scientific capabilities. He stated that the ability to generate, spread, assimilate, and apply the knowledge of natural phenomena has been the determinant in acquiring material wealth. The absence of this ability is correlated with the poverty of a country. It is natural, therefore to think that improving the capability of science and technology is imperative in aiding development (P54). The lack of scientific tradition is considered to be the most serious draw back to the proper development the in developing countries. The developing countries must build up an autonomous capability for problem solving, decision making and implementation in all matters relating science and technology to development. The need for scientific research in developing countries is based on many considerations. Each country is unique in respect of its social and cultural heritage. Its problems of health, ecology and environment the availability of natural resources, etc. Some degree of scientific expertise must be brought to bear upon development efforts which are based on these factors. Research merely following the advanced countries is wasteful. At the same time, without exposure to the advance scientific knowledge, the developing world losses advantage. Ways must be found for training scientists of developing world in advanced science and technology to make them good scientists without alienating from local scene. Many such issues exist in developing countries which need their own research effort and are not likely to receive attention elsewhere.

The author also argued that making science research to succeed in supporting local needs requires a different attitude than just doing good research work. More often, the limited research now being carried out tends to become academic, far removed from real life needs of the society. Reduced to basics, the important consideration lies in orientation of research effort. However, the rush in developing their own wide science base for most developing countries is not appropriate. Rather each country or region should address themselves to what fields of research are of immediate benefit and what goals they can afford. The industrialists and private organizations must play their role in providing conditions for their emergence.

The author pointed out that the lack of access to scientific literature in developing countries is one of the serious impediments to research, and recommended that a mutual arrangement can be worked out amongst libraries for sharing the import of a desirable range of journals. The provision of adequate facilities for reproduction of articles on request from scientists is the most acceptable solution and should be promoted by the international agencies. It is sometimes claimed that articles published by scientists working in laboratories in developing countries, even in international journals, are seldom cited in review works. Most scientists from the developing countries seem to prefer to publish their work abroad. The discourse advised that it makes very little difference where a paper is published as long as the piece of work is good.

Other impediments such as the lack of motivation of scientists, particularly in the financial aspects including the remuneration of scientist have been the focus of much recent discussions in relation to the brain drain of scientists and technologists from the developing countries to the affluent ones. With the acceptance of science and technology as being vital components of the developmental process, it remain the onus of administrators to recognize the worth of their scientific personnel and to promote their activities. Success in scientific fields in some countries is projected as the management of science more than doing science at the bench level. One fruitful way of obtaining useful research is to identify some unsolved problems and announce rewards for solving them. Reward structure of recognition will have an impact on the direction of research interest.

The committee on science and technology in developing countries (COSTED) also had discussions on scientific information services where it was resolved that to make effective use of science and technology, proper planning and adequate level of investment, effective use of known technologies and social discipline are prerequisites. One of the factors responsible for ineffective utilization of science and technology has been the ineffective dissemination of information in certain vital areas of science and technology. This makes literacy and information basic pillars in a country's development. The objective of scientific work have not been well defined and there is practically no scientific work directly related to the multitude of problems which exist in the developing countries.

One important objective before the developing nations is that they should reorient their information services in order to meet the basic needs of the weaker sections of the population in rural sector and that they should evolve appropriate plans and programmes to make information services more effective in the development of all sections of the community concurrently. National information policies should give high priorities to establishing extension service and to the use of mass media for communication of relevant scientific and technical information to the larger sections of the community, to tackle the high illiteracy in many developing nations. The international organizations should take active role in this endeavour and provide the necessary funds.

In some developing nations, the scientific community is criticized for undertaking work which has little relevance to the social problems of the people. A conscious effort must therefore be made by the scientific community to gather information about special social problems and frequently examine how an intelligent application of their scientific knowledge will help solve such problems. Special efforts have to be made to take information of the right kind to all categories of people based on national priorities. One of the difficulties with the traditional documentation centers is that they tend to accumulate vast amounts of information which is often not used at all, or which tends to excessively voluminous, insufficiently selective; and difficult to translate into usable knowledge by the customer. In this task, the extension workers should be able to give feed back to government on the requirements of the rural community (ESRF, 1966).

It was realized that the utilization of research results was essentially techno-commercial activity. Therefore, an understanding of business and industry and the springs which drive them is obviously essential before an effective research utilization policy can be formulated. Emphasis must be placed on a constant feedback mechanism which will not only help the information centres to provide appropriate services but wilt help to evaluate the work done by the change agents- However, the extension methods have not been so far very successful because they did not reckon with the sociology of the farmers and their basic conservative approach resistance to change.

The use of a sophisticated methodology chosen without regard to cultural needs will be a barrier to rural' communication and social restraints and will terminate in counter-productive communication efforts. This problem could partly be solved by regular in-service up-dating courses. These

programmes must continually attempt to identify the problems of people and seek to propagate the solutions, if already available. The likely problem that may crop in most developing countries is the evaluation of cost effectiveness of the information systems. The effectiveness of any information activity is often directly a function of the amount of money spent on it. All information services therefore require financial resources. It is argued that the presently available information services are not geared to the problems of the rural communities, but when considering the impact of information on industry at the rural level, it would be desirable to understand the ultimate objectives of the establishment of industry in a country. However, the interest of entrepreneurs who may want to start an industry in the rural areas is completely different from the above objectives of government. Their aim is profit making. Even in the case of public sector industry, the profit motive is not ruled out, while it is stressed that public interest should be paramount.

If information systems are to support national development, then the concept of appropriate information should be evolved implying relevance information to needs. Therefore in organizing international workshops, seminars, training programmes, etc a careful assessment of the infrastructural facilities within a country must be made to avoid a situation whereby the training programme become ineffective.

In section five, the discussion focused on agricultural development programs. That accounts for one to two-thirds of the GNP of the developing nations (Asta, 1978) and is required to provide the capital that is needed for its own development and additionally to make available not only the physical surplus needed by other sectors, but also the economic surplus which constitutes the material basis for economic development.

> Any attempt to make a significant reduction in unemployment through industrialization is not feasible. The required rate of growth which would not only reduce existing unemployment and under employment but also absorb a growing labour force is beyond the resources as well as the organizational and managerial ability of a typical developing country. Consequently, employment opportunities must be expanded in the agricultural sector and related activities in the field of rural development(Islam, 1974; xv).

Agriculture forms the chief source of food and accounts for the bulk of foreign exchange earnings through exports. But increase in agricultural production could not match the increase in population and the very survival of the developing countries depends on how soon and how efficient their agriculture is galvanized to play the key role it occupies in the economy. However, farming is practiced more as a way of life conforming to the social structure of the community (Wortman & Cummings, 1978). The yield levels in the developing nations lack stability due to periodic droughts and epidemics of pests and diseases probably due to low literacy levels.

Since attaining political freedom during the last 50 years, the developing countries have been making concerted efforts to develop agriculture. However, their impact has been far below expectation, and consequently agricultural production has remained sluggish, almost always falling short of targets.

Schultz (1964), has rightly pointed out that the lack of investment opportunities for the farmers in the developing nations in the shape of improved agricultural imputes is the reason for the lack of success of programmes to modernize agriculture in developing countries.

The developing countries are generally endowed with adequate natural resources, which should make agriculture a paying and prosperous occupation. Yet the exploitation of these resources is still largely through traditional techniques of farming which are to bemodernized if the challenge is to be met. The spectacular increase in crop production in the developed countries has been brought about by revolutionary changes in technology aided by provision of an infrastructural, institutional and socio-economic framework which acts as an engine of change in transforming subsistence agriculture into a modern and high productive one. Within the 1960s, there was the emergence of a formidable international research network aimed at generating technology to raise agricultural production in developing nations. International research though based in one country, is of wider concern, regionally or globally, is independent of national interest and government control, and retains appropriate links with national and other regional or international research systems to ensure the necessary testing of results and feedback of both results and need (Crawford, 1977). The international institutes constitute one of the more successful modern day examples of international cooperation. They hasten development of new technologies.

A more efficient level of management and adequacy of inputs are also necessary to realize the full potentials of the new technology. With the increasing emphasis now being placed on integrated farming system involving crops and livestock; the need for increased research efforts in the field of animal husbandry becomes self-evident if the agriculture of the developing countries is to prosper, research on animal science needs to be strengthen adequately. Generally, technology can be generated through research priorities, input and soil management, cropping and farming systems, waste recycling, animal husbandry, fisheries, etc, However, with regard to fisheries, the developing countries are handicapped due to lack of scientific Information on many aspects of agriculture. Also many developing countries do not have the necessary market outlet to develop their fisheries resources. While individual nations efforts are essential to overcome these lacunae, regional cooperation among these nations can also help in the achievement of this goal.

The chief constraint for the spread of the green revolution is rightly considered to tie the slow development of an appropriate institutional framework for extension services and credit for the small farmers. Others include the problem of storage and marketing, land development and tenure, and incentive prices. The bias in favour of technical solutions has been strengthened by the approach to planning with its large-scale evasion of the problems implicit not only in institutions but also in attitudes and modes and levels of living. It has been further reinforced by a vision of the miracles to be wrought by the application of modern science and technology (Myrdal). Technology developed on experimental stations may not reach the farmer, or simply may not work with the farmer under his conditions or is beyond the managerial capacity of the farmer uneducated, inarticulate and poorly organized, farmers are seldom in a position to influence the actions of their government, and they are at the end always getting a raw deal (Hopper, 1976). Poverty and peace cannot coexist and agriculture plays a key role in fighting rural poverty.

Under the health services and medical education, the committee agreed that in a well developed society, people should be living in a happy, contented, healthy and safe life, and a progressive well being. This makes the opportunities to engage in productive activities and to share the benefits of economic growth very essential.

The position of a former WHO DG (Dr H. Mahler) was emphasized that:

> ... the present system whereby conventional medical care benefits only a small group of privileged individuals in the main cities of most countries of the 3rd world is the very antithesis of the utilitarian principle of the greatest happiness to the greatest number. Therefore it is a moral imperative of the new economic and social order that countries give health promotion its rightful place in all social and economic development (p126).

Clearly all is not well with the health care operations in the developing world. They linked up underdevelopment with such problems as malnutrition, over population, major infections - where it was viewed that industrialization and modernization of agriculture have brought in their wake more accidents and ever increasing exposure to poisons. The stresses and strains of enforced civilization have increased the incidents of diseases of stress, even as hospitals are unevenly distributed in the developing nations.

A closer look at the hospitals/health care was made with consideration to Dr Carroll Behrorst remarks that "inside our hospitals, we find modern practices and equipment, dedicated staff, and a respectable rate of care. Outside their walls, misery, poverty and diseases march bleakly over the landscape" (p133). The wide gap that exist between the hospitals and the needy patient was also brought to focus; a temple for the glory of the staff and of medicine, rather than the care of the common man. The developing countries are typified by urban bias in health care delivery and a reversal of this inappropriate and counterproductive stress on urban areas is urgently needed. Health care delivery in developing nations cannot be meaningful without directing its scanty resources and scares services to the need majority. The committee pointed out that primary health care (PHC) is the key to attaining the target of health for all as a part of development in the spirit of social justice. One strategy in the delivery of effective community health care is the participation of the people themselves in the process. Attainment of high standards of environment and personal hygiene should turn out to be a routine consideration for all. The process implies a change in attitudes, and the attainment of a state of modified behaviour.

Health education efforts should be developed not only from professional knowledge and expertise but also from basic public health and social sciences.

Consideration concerning social needs, goals, aspirations, cultural influences and practices of the community for whom the educational exercise is to be staged must not be ignored. No educational program should be blind to the milieu of the people for whom it is meant. Sudden disruption of a cultural ecology; however unscientific existing practices appear, may spell disaster to a rural community end certainly to the process that is responsible for the disruption. The proper preliminary to the launching of a health education campaign, therefore, is a complete community diagnosis of all economic, social, religious, and cultural factors that go to formulate the life style of the people. It should be to the advantage of health personnel that many cultural and religious beliefs of rural folk could be harnessed to evolve important principles of health. These beliefs and practice should be collected, examine, processed and used to produce useful effects.

Cultural, religious and emotional requirements should not be lost sight of in the glare of science and technology. Whatever the development ventures, it should not be thrust upon people. They advocated for a properly constituted medical education system that will produce the kind of doctors that the society needs. Unfortunately, in most developing nations, foreign degrees are given higher priority and therefore command higher employment opportunity and earning potentials. They also confer higher social status. So qualified, they concentrate on the city and the teaching hospitals and private practice. Thus, they drift away from the community.

The scarcity of health care delivery personnel is not confirmed to the field of doctors alone, but also to paramedical personnel. Even those available are often not put to best use. There should be a drive to increase the number of paramedical cadres (auxiliary) in developing countries. Auxiliaries are not assistants, they are health care delivery personnel in modern science and technology towards overall benefits and varies from one place to another.

It is based on this varied potentialities that technology transfer plays an important role in the developing countries. Though the problems that majority of the developing nations face are more or less similar, the manner in which technological solutions are obtained either through indigenous development or through regional/ international exchange or import will be different. For technological solution to be successful, it must be consistent with the environment that exists in the context. Certain compatibility conditions must be satisfied, to avoid a mismatch between the conditions necessary and the conditions imposed. Such compatibilities include monetary compatibility, material compatibility, Infrastructure i compatibility, social and political compatibility, and ecological compatibility. In all the technology that is suitably adapted to the focal environment is the one that will have a high degree of probability of success.

However, there are cases where some developing nations in their desire to appose anything foreign tend to reject any technology that is not invented locally. This can be caused by people with vested interests such as the wealthy and politically influential who do not want anything local thereby protecting their individual businesses. Any developing country that desires to become technologically autonomous should encourage a parallel growth of all elements considered as the agents of technology generation such as individuals, industries, government, universities and research institutes, industrial research laboratories, small industries service institutes, transactional corporations, and technical aid programmes.

Certain constraints in the technology development were identified. These include monetary, material resources, skilled manpower, energy, supporting infrastructure, managerial, social and political, ecology, time, national security, government policies, and international agreements. A technology which is consistent and compatibility with the environment is their own right, performing a specific function assigned to them and for which they have been adequately trained.

It is also the duty of all nations not only to safeguard their water resources from pollution, but to provide dean drinking water, and to repair damages which may have occurred already to the aquatic environment. This would ensure the preservation of one of the age old sources of food -fish.

A critical look at drugs and the 3rd world nations, revealed that multinational drugs companies fail to carry out research into disease common in developing countries - notably tropical disease. While firms are complacent about tropical diseases, the need for research into them keeps increasing. The

appeal to brand named drugs is so strong that the big drug producers charge high prices that have little relations to the cost of production or to prices charged by smaller competitors. One of the UN drug strategy to overcome this situation is the call to develop a local drug industry closely suited to the socio-economic conditions of the country, using where possible, small scale appropriate technologies and traditional herbs.

It is admitted that international agencies do not dictate policy at national level, but attempts to win over and change national outlook, will not be in conflict with that principle. Research expertise, resources, information, etc, could most gainfully be originated collectively and then shared based on need.

In section seven, the committee had a discussion on technology transfer and industrialization where it was conceived that science and technology play a dominant role in the development of a country. They argued that though science and technology can be used for destructive purposes, there are a lot of rewards that man can get through proper utilization of science and technology. The committee concluded that the benefit of sciences and technology are not distributed uniformly in all parts of the world, and also that the capacity to utilize the potentialities of an appropriate technology. Developing countries should therefore learn from the experience of the developed nations and take into consideration the environmental quality in the initial stages of industrialization. While the urgent need for rapid industrialization and technological revolution in developing countries is not in doubt, there must be adequate provision of water pollution control and water quality management, air pollution control and air quality management, solid waste disposal, water resources management; among others, to carter for the side effects of such technological development activities.

On natural resources; the author argued that the world can no longer be considered as a collection of various nations consisting of a number of political or economic blocks. It needs to be viewed as a consortium of nations which constitute a world system of mutually interdependent subsystems, but however agreed that the problems facing developing countries with regard to existing and potential natural resources are very different from those of the affluent nations (P191).

In view of the under exploration of mineral resources in many 3rdworld nations, there is still a large scope for these countries to explore, exploit, conserve and manage these resources wisely. The goal for the developing countries should not be merely earning foreign exchange by selling raw materials, rather the proper utilization of mineral resources after their discovery; for meeting the needs of the people, must claim precedence over exploration for export. The increase in oil prices is more dependent upon political factors rather than on sources or exploration techniques.

Deforestation in the name of agriculture and for commercial purposes is resulting in heavy soil erosion, floods and focal changes in climatic damages which are not easy to repair. Unless some fundamental changes in consumption patterns occur to alter current trends, such as reforestation programmes to off-set the losses, the future of the forests in developing countries appears to be obliteration. However, there is the problem of inadequate manpower to exploit the land resources.

The highly ostracized social hierarchy and work ethics are also responsible for the under utilization of manpower and low intensity of land resources use. Therefore, apart from developing relevant technology, there is need for a change in the socio-economic systems so that the vast number of human population could be seen as a productive force rather than a burden on the economy. Consequently, in the application of science and technology in the exploitation of resources, it should not be a question of a large-scale sophisticated technology to suit the smaller units, but generation of technology relevant to the situations. The poor can be assisted to help themselves, but only by making available to them *a* technology that recognizes the economic boundaries and limitations of poverty.

The 3rd world nations should therefore do their best to develop such technologies indigenously which suit the natural resources mix of the particular country.

For the management of natural resources, techniques like systems analysis and mathematical models can be advantageously employed in integrated planning. For survey and assessment of natural resources, techniques like remote sensing and satellite imagery for quickening the pace of surveys may be employed. To make satellite data of earth resources freely available and have a continuing and assured satellite survey programme, the committee recommended that the UN should take over the responsibility of launching earth resources satellites, collect data, distribute same to developing nations, and provide training facilities in utilization of satellite data for resources surveys.

The socio-economic structure in developing countries is often itself an important factor in conservation of natural resources. Attempts should therefore be made to attain a shift in the objective of resources development in the 3rd world nations to meeting the consumption needs of the society rather than that of the individuals.

Radhakrishna; in his overview, recommended that science education must be used as a means of promoting a scientific culture where it will teach people the art of learning from what they see and using what they learn to solve their daily problems. Therefore, while the exposure to research training in developed nations is useful, it should not be allowed to alienate the researcher from the development problems of his own country.

Bhagavantam; in his strategies for development, observed that the fundamental problem in the field of international relationships appears to be one of power, fight for supremacy for one's own country in the global set-up, coupled with unlimited ambition for amassing material wealth. In this struggle, broader objectives like welfare of the total mankind, respect for human rights based on the equality of all human beings without reference to colour, nationality or creed have receded to the background if not obliterated altogether (p238) in the developing countries, the real focus of science education should therefore be its relevance to local problems and the satisfaction of basic human needs.

A critique of the book shows that the basic need strategy has difficulties in actual planning. Basic needs mean different things to different people. To some, it's purely a humanitarian matter. While to others, it essentially involves a complete reassessment of the goals of development and emphasize the need for a completely and radically different approach.

Again the GNP as a development indicator does not reflect the actual state of the people in a country. Even the Physical Quality of Life Index (PQLI) that was later proposed as a better indicator, does not quantify such parameters as justice, political system, and happiness which must be taken into consideration if one is to assess whether the individuals' basic needs are actually met or not. It also fails to give a direct indication of economic development. In short, there is no direct correlation between the PQLI and GNP.

All the indicators fail to assess the status of women in the development of a country particularly as it concern their role mostly as unpaid workers at homes. It is in this capacity that other family members are left free to carry more productive work. Yet the GNP does not take this into account. However, the application of science and technology to the process of development has undoubtedly made human life more comfortable and trouble free, as well as provided new and exciting gadgets and better economic prosperity.

Despites it's almost four decades of publication, Radhakrishna's discourse remains relevant in the contemporary global politics, as it provides an insight into the inter-connectedness between science, technology, and the prospects for the 3rd world in solving their developmental problems. The book therefore remains thought provoking, particularly in the field of sciences and technology in international relations.

Therefore the book; Science, Technology and Global Problems: views from the developing world, though full of repetitions and so much emphases, is a useful and developmental recipe for all 3rdworld nations, and a must read for students in the field of science and technology in international relations, as it practically evolve relevant strategies for development in the international system.

REFERENCES

[1] Asta, R. (1978) Challenge and Opportunity, Asian Development Bank. Praeger publishers.

[2] Crawford J.G. (1977) "Development of the International AgriculturalResearch System". In Thomas M. Arndt, Dans G. Darlympole, and Vernom W. Ruttan (eds) Resource Allocation and Productivity in National and International agricultural Research. University Minnesota press- Minneapolis.

[3] Economic and Scientific Research Foundation(1966). Research and Industry: seven case Histories. New Delhi.

[4] Hopper, W. D. (1976) The Development of Agriculture in Developing Countries. Scientific American, Sept.vol. *235*, No 3.

[5] Islam, N. (1974) Agricultural Policy in Developing Countries. Proceedings of a conference held by the International Economic association at Bad Godesberg, West German, Macmillan.

[6] Myrdal, G. (Undated) Asian Drama: an inquiry into the poverty of Nations. Penguim Books.

[7] Schultz, T. W, (1964) "Economic Growth from traditional agriculture". In A. H. Moseman (ed) Agricultural science for The Developing Nations.

[8] Timamy, M. H. K. (2007). The Political Economy of Technological Underdevelopment in Africa. Renaissance Prospects, Global Tyranny, and Organized Spoliation, Concept Pub. (Press Division) Lagos.

[9] Timbergen. J. (1976) Reshaping the international order. A report totheclub of Romes, E. P. Dutton and Co. Inc. p130.

[10] UNGA Resolution 262 (XXV)

[11] Wortman, S. and Cummings, R. W (1978). To feed this world - the challenge and the strategy. The John Hopkins University press, Baltimore, Maryland, U.S.A.

Citation: *Sunday Esoso Nsed Ebaye. "Science, Technology and Global Problems: Views from the Developing World". International Journal of Political Science (IJPS), vol4, no.4, 2018, pp.22-31. doi:http://dx.doi.org/10.20431/2454-9452.0404004.*