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## Role of Science Education in the Achievement of Millennium Development Goals (MDGS) For Sustainability in Nigeria

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### Abstract

*The millennium development goals are an internationally agreed framework of 8 goals and 18 targets complement by 48 technical indicators to measure progress towards achievement of these goals. The goals have their origin in the ideals universally shared by all member nations of the United Nations organization (UN) to eliminate human misery, improve the quality of life of all citizens of the member nations and to do so in an environmentally sustainable way. Science is defined as a system of acquiring knowledge based on the scientific method, as well as to the organized body of knowledge gained through such research. The scientific method is regarded as the most progressive approach towards problem solving that is so far known to humanity. This is evident from the high level of innovativeness and technological advancement of the nations in which the scientific approach is the dominant way of addressing problems. Many nations are convinced of this link between science and economic development and therefore strive to improve their scientific competence. Nigeria is one of such nation. The purpose of this paper is to examine science and its achievement towards millennium development goals (MDGs) for sustainability in Nigeria. Further conclusion and recommendations were made as to how Science Education could achieve millennium development goals (MDGS) for sustainability in Nigeria.*

There is no doubt that the millennium development goals (MDGs) have affected almost every aspect of human life. Nigeria is one of the countries most committed to achieving the MDGs. Recognizing the increasingly deteriorating conditions of life in most countries of the world more especially amongst the

developing or third world countries characterized by abject poverty, lack of basic education, dwindling health condition, the united nation organization declared the eight millennium development goals (MDGs).

The underlying assumption in this topic is that science, some how, has a bearing on the ability to achieve the millennium development goal (MDGs). To set the background, let us briefly review what the millennium development goals are, and how they come about. After that, we will then concentrate on exploring the link between science and the millennium development goal and how science can facilitate the achievement of these goals in Nigeria, in particular for sustainability in Nigeria.

### **The Millennium Development Goals**

Millennium development goals are an internationally agreed framework of 8 goals and 18 targets complements by 48 technical indicators to measure progress towards achievement of these goals. The MDGs from a blueprint agreed and consented to by all the world's leading development institutions. The 8 goals are given below:

Goal 1. Eradicate extreme hunger and poverty.

Goal 2. Achieve universal primary education

Goal 3. Promote gender equality and empower women.

Goal 4. Reduce child mortality.

Goal 5. Maternal Health.

Goal 6. HIV/AIDS, Malaria and other diseases.

Goal 7. Ensure Environmental sustainability.

Goal 8. Develop a Global partnership for development. Brinkerhoff, (2004).

The goals have their origin in the ideals universally shared by all member nations of the united nation organization (UN) to eliminate human misery, improve the quality of life of all citizens of the member nations to do so in an environmentally sustainable way. The millennium development goals are therefore about sustainable development for all nations of our planet. What makes them special is that they come with specific targets, indicators for measuring achievement and datelines for achieving these targets. A substantial number of the targets are expected to be achieved by the year 2015. Within this context, therefore, a major theme, that could be usefully explored, is how science can play a role in expediting the achievement of these goals by the set datelines. This is not an easy task. Scientific advancement has, most of the time in the history of mankind, been an inherently slow process. Nevertheless, scientific advancement has also over the history of mankind, shown it to be highly demand driven. Today there is so much human misery on our planet. Worse of all, unless we do something now, the outlook is even bleaker. We need to garner all our capabilities. There has never been a time in the history of the earth that we have needed science more than we do today. The demand driven nature of scientific advancement, coupled with the fact that many nations of UN are already highly scientifically advance gives hope that, provided the will is there, it is possible to leverage science in the achievement of the millennium goals with targeted datelines.

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### **What is Science?**

What is science? And what entry points does it provide for the achievement of the millennium development goals? According to Shermer (1993), the term ‘science’ “... a system of acquiring knowledge based on the scientific method, as well as to the organized body of knowledge gained through such research”.

Hence our consideration of the relationship between science and the millennium goals is based on two links. First, the scientific method provides thinking and planning model that could benefit the implementation of the goals. Secondly, that through science would acquire greater knowledge of how things work in nature. Through this knowledge we become better able to find and implement effective and efficient solutions.

A key characteristic of science that distinguished it from other approaches is its progressive nature. By progress we mean the cumulative growth of knowledge over time. The word progress is, therefore, use here in its value neutral sense. The progressive nature of science arises from the way that scientific prodigious change. Shermer (1993) defines a scientific prodigious as “... a mental model shared by most but not all members of a scientific community, designed to describe and interpret observed or inferred phenomena, past or present, and aimed at building a testable body of knowledge open to rejection or confirmation”.

The prevailing culture (which includes the religious beliefs and myths) of any society, therefore, greatly impinges on how science is perceived and practiced in that society. To that extent, science can even be described as a culture, a way of perceiving and doing things. There is no doubt that the way a society perceives and does things is crucial to the problem solving capabilities of that society. Most arguments about how science can bring about development in human societies (i.e. Improvement in quality of lives of individuals such that they are able to attend their productive capabilities and aspirations) are base upon this purported link between science and development.

### **The Link Between Science and Development**

The argued link between science and development, put in its simplest form, is as follows: societies that approach problem- solving in a scientific way are better able to develop more effective techniques and technologies to solve those problems. To approach problem- solving scientifically a society must imbibe the culture of science. Most of the major breakthrough technologies that are currently in use have only become possible as a result of the ground breaking scientific breakthroughs for which the Nobel prizes have been awarded. Until the recent rise of the emerging economies of Asia, these technologies have traditionally been development within the share (of Western Europe and USA) where the basic scientific research which made them possible was conducted. Adebayo, (2002).

In summary, scientific competence is necessary to sustainable improvement in quality of lives of the citizens of any nation. Whether it comes before a nation becomes wealthy or after is not really the issue. Increased scientific competence will make wealthy nations wealthier and poor nations wealthy.

### **Achieving the MDGs Through Science**

By now it can be assumed that national scientific competence and the quality of life of the citizens of a nation seem to have a close correlation. We need to achieve a high level of national scientific competence if we are to have a high quality of life similar to that enjoyed by western industrial nations. But the process of acquiring this national competence in science is itself a development exercise because of its inherent property in capacity building and the associated employment income opportunities it creates. Let us expand this reasoning further by identifying some strategies for achieving the millennium goals and how the quest for scientific competence can be deployed in their implementation. It may be possible to condense all strategies for achieving the millennium development goals into a few broad objectives as follows:

- 1 Generate employment (Building the capacities of individuals and families lies to generate sufficient income to meet their basic needs).
- 2 Improve agricultural productivity (reducing cost of food and raw materials thus making income go a longer way)
- 3 Improve health consciousness and access to health delivery.
- 4 Improve social justice.
- 5 Establish good governance.
- 6 Improve environmental consciousness.

A national plan to improve the scientific competence of Nigeria will directly impact on each of the above objectives. Consequently, tremendous opportunities exist for the achievement of the millennium development goals through a concerted national effort to achieve a high level of national scientific competence. We need national scientific competence to increase our economic potential as a nation and to give us the competitive edge needed in a globalizing world. At the same time, the process of acquiring this national scientific competence actually makes us better by creating employment and the environment for innovation, creativity and good governance. Government certainly has the resources to carry out this role. In the next section we present some recommendation for increasing our natural scientific competence and correlate them to the millennium development goals for sustainability.

### **Conclusion**

The world currently faces daunting challenges. Never before, has there been such a great need for humanity to draw on all its abilities. Rapid increase in human population and consumption is creating ripples that are fast changing the nature of our environment. Extreme poverty and hunger remains a plague. New diseases are emerging. Old one is yet to be curtailed. We are far from achieving social justice for all. Science and technology provide us with an indispensable avenue through which we can address these problems. The millennium development goals mark the starting point for the actions needed and provide the demand side for which our supply of science and technology should be based if we are to meet our aspiration for a world in which human misery is reduced to the barest minimum.

The common pool nature of the demand means that government must be the ones that must take the initiative. This is particularly developed countries of sub

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Saharan Africa must follow the example of the emerging economies of Asia and develop a large pool of scientifically literate and skilled workforce and create an environment for technological development, innovation and entrepreneurship. That is the only way that we can ensure a better future of our children and their children for sustainability in Nigeria.

### **Recommendations**

To improve our national scientific competence we propose the following measures. In essence, therefore, the recommendations are also for the achievement of the millennium development targets for sustainability.

1. Train more high quality science teachers.
2. Train more science education support staff.
3. Promote better public understanding of science.
4. Encourage industry (both local and transnational) to support capacity building for local research and development.
5. Encourage local science equipment manufacturing.
6. Improve access to information technology and links with international scientific community
7. Improve support to universities and polytechnics

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