

# **SCIENCE AND TECHNOLOGY IN GHANA: BRIDGING THE PAST AND THE FUTURE**

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Science is the method of investigation in which a problem is first identified and observations, experiments or other relevant data are then used to construct or test hypotheses that purport to solve it in the physical and natural world.

While on the other hand, technology is the application of scientific knowledge for practical purpose especially in industry and commerce to make life meaningful as well as easy.

Significant achievements of science and technology are very useful and essential to the world as a whole and therefore without an advance in science and technology life is going to be unbearable and uncomfortable for all of us.

We can testify to the fact that science and technology has really helped in the development of the world, Science and technology is the bases of modern civilization, the age in which we live can rightly be called the age of science and technology.

The process of science and technology has made many useful achievements in every field of our lives. In everyday of our lives we enjoy various gifts of science and technology that has made our life easier and comfortable than before.

For our daily comforts, science has given us the electric light, the electric fan, the refrigerator, the microwave and the electric cooker. Science has made our means of communication and transport very easy and cheap. Buses, trains, ships, subways and aero-plane use advance technologies and carry us to distance places more quickly. Science and technology has also provided us with amusements like radio, television that entertain us.

Now satellites are sent to the sky to bring many information of the outer space and men have even been able to set foot on the moon and know many vital things

about other planets. All these have been possible due to the development of science and technology.

But science and technology has also been abused by many people. The gross use of science and technology for destructive purposes has twined it to a curse, dangerous and deadly scientific weapons like the atomic and hydrogen bombs can destroy the world in a moment.

Ghana has an Academy of Arts and Science and the Academy was formally opened on 27<sup>th</sup> November, 1959 by Prince Philip, at the great Hall of University College of Ghana, who became its first President along with Dr. Kwame Nkrumah. The mission of the Ghana Academy of Arts and Science is to encourage the creation, acquisition, dissemination and utilization of knowledge for national development through the promotion of learning in all branches of science and the humanities.

One of the major roles of the Ghana Academy of Arts and Science is to act as think-tank to government in accordance with the Act that established the Academy 48 years ago.

In fulfillment of this aspect of the Academy's mandate, it recently went into dialogue with the council of state on the question of science and technology governance.

No science and technology policy can make any meaningful impact on society if the governance structure at the highest level is weak. The modern world economy has been shaped by scientific and technological advancement, resulting in the emergence of the knowledge Economy. No country has been able to modernize its economy without reliance on scientific and technological inputs on a Massive Scale.

The importance of science and technology as the main tool for economic and social development has been emphasized in several major world forums and documents.

In 2004, United Nations report entitled *Inventing a better future: A strategy for building a World-wide Capacities in Science and Technology*, prepared by Inter Academy Panel (LAP), made up of 90 of the World's Academies of science including the Ghana Academy Of Arts and Sciences, it was clearly stated that "All

nations, whether industrialized or developing, face a broad array of challenges that will require the application of up-to-date Scientific Knowledge and technology. No nation can now afford to be without access to a credible, independent science and technology (S&T) research capacity that would help it to develop informed policies and take effective action in these and other areas”.

Another report from the Inter-Academy Council (IAC) and the Inter-Academy panel (IAP), has underlined the fact that no African country can develop its agriculture, ensure food security and produce a surplus for export without a massive and sustained infusion of human and material resources from science and technology into agricultural production without embedding science, technology and innovation in development, we fear that ambitious for Africa will fail.

All governments of Ghana since independence have acknowledged in principle, pivotal role of science and technology in the country’s economic and social development. The problem has been with implementation, that’s why 50 years after independence we are still crying about the same issues that were clearly identified in the country’s first major development plans 47 years ago.

The documents therefore recognize the weak science and technology governance structure of the country as a major obstacle to successful entrepreneurship.

Ghana needs to rapidly train and create the critical mass of scientists and technologists to enable her provide and manage emerging industries and take full advantage of the global technological explosion with the required human capital. The country needs to modernize and re-equip existing scientific, technological and industrial establishments to meet the current challenges and cope with current and future global trends.

Science and technology education in Ghana is not responding adequately to development needs due to inadequate funding, poor management, obsolete pedagogical strategies and the very weak governance structures that have bedeviled our scientific endeavors since independence. Current resource allocation of Gross

Domestic Product (GDP), far below the minimum of One (1) percent proposed in the Lagos plan of action.

Advance countries and some of the emerging countries such as Korea, Malaysia and Singapore devote as much as three (3) to ten (10) percent of GDP to support science and technology.

Constraints to the rapid development of adequate scientific and technological manpower to support our industrial and economic development include poor laboratory and workshop facilities, low enrolment of science and technology students, weak and ineffective linkage between training and research institutes and the productive sector, and a very poor science culture in the society resulting in a general lack of appreciation of science and technology and its relevance to development.

We tend to look at issues of development not as challenges that need sober scientific appraisal for solutions, but as issues that can only be solved by divine intervention. Ghana cannot expect to develop as a nation without devoting substantial human and material resources to research, development and application of science and technology, and the governance structure for achieving these objectives is absolutely crucial.

To conclude, science and technology can make the human civilization perfect in all respect, so a modern curriculum of studies must include the study of science and technology, because the modern man needs a scientific mind in approaching the problems of life.

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