

THE SHEDA SCIENCE AND TECHNOLOGY COMPLEX: AN OVERVIEW

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INTRODUCTION:

The Sheda Science and Technology Complex (SHESTCO), a parastatal under the aegis of the Federal Ministry of Science and Technology, was established by Act No. 43 of 1991 as amended by Act No. 95 of 1993 as a multi-disciplinary Research and Development Centre. The Complex was established for the purpose of enabling institutions and individuals to undertake a wide range of research and development in a comprehensive and organized manner. The multidisciplinary nature of its activities creates a more conducive scientific environment, enhances collaboration and provides a multidimensional approach to the solution of developmental problems.

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VISION

The Complex was created with the vision to:

“Provide opportunities for utilizing high technology to contribute to the upliftment of the standard of living of the Nigerian citizenry as well as guarantee a wholesome environment”.

1.2

MANDATE

To achieve this objective, the Complex is to promote effective information exchange between it and other institutions within the country as well as between it and international institutions. It is also to contribute to the competitiveness of industries by promoting innovation and thus assure their profitability and survival.

In order to actualize the vision for the establishment of the complex, its enabling Act mandates it to:

- Develop facilities for the effective practice of applications oriented science and technology in Nigeria;

- Carry out research and development (R&D) activities involving the highest level of technologies available in the world with a view to strengthening the technological base of the Nigerian economy;

- Operate a nuclear research reactor facility capable of providing service in the fields of agriculture, medicine, mining and industry, as well as engage in capacity building for generation of electricity from nuclear power plants;

- Operate internationally accessible and comprehensive facilities in the area of science and technology;

- Conduct research and development activities in the fields of conventional and non-conventional energy, as well as in the basic sciences, electronics, computer science and materials science;

Carry out structured manpower training to meet the growing needs of Nigeria in the areas of high technology; and

Provide avenues through which all the institutions of higher learning in Nigeria may carry out capital-intensive research on a cost effective basis.

The Complex operates as a Centre of Excellence in high-level R&D where all Scientists and Engineers from Nigeria and beyond come in order to generate first-rate scientific and technological results and breakthrough for national development. The Complex would have a concentration of sophisticated equipment and other facilities, which ordinarily cannot be provided in every research establishment due to their high costs and the attendant possibility of under-utilization. These facilities are available to legitimate researchers from National R&D Institutions, the Academia and Industry, to conduct research activities towards enhancing their capacity to make relevant input into the nation's developmental process.

The Complex is located at Sheda, about 70km from Abuja City centre; southwards of Gwagwalada along the Kaduna-Lokoja Road.

1.3 ORGANIZATIONAL STRUCTURE

The management and R&D activities of the Complex are planned and organized under four main divisions. These are:

General Administration;

The Nuclear Technology Centre, which is planned to consist of a Multi-purpose Research Reactor, a Gamma Irradiation Facility among others;

The National Advanced Laboratories Centre, which consists of the Physics, Chemistry, Biotechnology & Genetic Engineering, and Energy Advanced Laboratories; and a

Science and Technology Information Centre, which is planned to consist of a Science and Technology Library, a Science and Technology Museum, among others.

Owing to the large capital outlay entailed in the building and emplacement of the facilities in the Complex, implementation of the various projects is phased. Thus, some of the facilities are still in varying stages of development.

1.4 GENERAL ADMINISTRATION:

The overall administration and management of the Complex is vested in the Office of the Director-General. Under General Administration are the departments of Personnel Management, and Finance and Supplies. The Director-General is the Chief Executive of the Complex, and is responsible for the execution of the policy of the Complex and the day-to-day running of affairs of the Complex.

1.5 THE SHESTCO LECTURE SERIES:

In an effort to implement its mandate to foster national growth and development through the application of science and technology, the Complex has also embarked on the publication of textbooks. This was in realization of the fact that the impediment to research and development in this country lies not only in the paucity of laboratory hardware in our institutions of higher learning, but also in the near total absence of high-level textbooks developed here in our own environment. The high cost of imported textbooks has resulted in the “hand-out syndrome” that has plagued our universities.

The dearth of advanced science and technology textbooks has been further occasioned by the limitations of commercial publishing houses and academic publishing outfits located in some universities. In order to inculcate a meaningful research and development culture in this country, students must be brought up with a proper technical reading culture through familiarity with books and periodicals developed in the context in which they are supposed to create innovations later in life.

The SHESTCO lecture series was therefore designed to bridge this gap through the provision of slim readable texts that cover most of the critical disciplines, namely the Physical Sciences, Chemistry, Biotechnology, Energy Studies, Information Technology, and Managerial Science. The last topic is essential if research is to be tied effectively to development. Business Management and Entrepreneurial Science are indispensable for efficient and effective science and technology planning.

Already two volumes of the series have been published in the fields of numerical methods and quantum mechanics, and three other volumes are being developed. It is the expectation that academics in our institutions of higher learning will seize this opportunity to contribute towards the actualization of this noble objective.

1.6 SHESTCO AS A NATIONAL CENTRE FOR TECHNOLOGY INCUBATION:

The Facilities at SHESTCO, particularly the National Advanced Science Laboratories in Chemistry, Physics and Biotechnology have been substantially established and have served as focal points for advanced research and development work for the Science and Technology Community. In line with the mandate of the Complex to provide the requisite interface for wealth creation through science and technology innovation, the Chemistry and Biotechnology Advanced Laboratories are serving the very important function of national centres for technology incubation, and the policy thrust of partnering with industry to deliver services and products is taking root.

1.7 INTERNATIONAL COOPERATION AND COLLABORATIVE PROGRAMMES:

SHESTCO has established productive relationship with various international organizations and renowned research institutions, worldwide. Some of the

specific collaborative programmes and cooperation are listed under the respective research departments. The development of the anti-sickling drug, NICOSAN, which is also reported in this brochure, is as a result of such collaborative effort.

In line with the revised National Science and Technology Policy, the Complex has also constructively engaged the various institutions of higher learning, thereby availing them of its facilities for graduate research and training. The results have been quite positive.

1.7 PROFILE OF THE DIRECTOR- GENERAL/CHIEF EXECUTIVE:



Dr. Ayodele Joseph Coker studied Physics at the University of Ibadan and graduated with Honours in 1971. He registered at the State University of New York at Albany for his graduate studies in Theoretical Physics where he obtained the M.Sc and Ph.D degrees in 1974 and 1978, respectively. After some post-doctoral research at Albany, Dr. Coker taught briefly at the University of Port Harcourt, Port Harcourt from 1980 to 1982. He then moved to the Federal Ministry of Science and Technology in 1982 as an Assistant Director, and rose to the rank of Director in the Department of Energy Research and Natural Resources in 1990. In the same year he was seconded to the Sheda Science and Technology Complex (SHESTCO). In 1998, he was appointed to his current position as the Director- General of SHESTCO. Dr. Coker is a Fellow of the Nigerian Institute of Physics, and has published widely in the area of Theoretical and Applied Physics. He is the co- author of three books and the author of two monographs in various aspects of Applied Science.