KEYNOTE ADDRESS: SECOND CONFERENCE ON SCIENCE AND NATIONAL DEVELOPMENT

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It is my great pleasure to give the keynote address at this occasion of the Second National Conference on Science and National Development organised by the College of Natural Sciences University of Agriculture, Abeokuta, in collaboration with two of the most important parastatals in the Ministry of Science and Technology; the Raw Materials Research and Development Council, and the National Agency for Science and Engineering Infrastructure, Abuja.

This initiative specially gladdens my heart in that an attempt is being made once again to bring the academia, the industry and government into the mainstream of Science and Technology (S and T) development planning efforts in Nigeria. I believe that the composition of the stakeholders in this conference is not by accident but specifically planned to deliver the most realistic approach to the development of our nation. In the history of Nigeria, different programmes at various times have been adopted in efforts at finding solutions to the numerous challenges of national development. The adoption of the National Economic Empowerment and Development Strategy (NEEDS) is a recent response to these challenges. Although NEEDS is designed as a medium-term development strategy It has long term goals of sustainable poverty reduction, employment generation, wealth creation and value re-orientation. For certain, the NEEDS agenda has triggered widespread reform in all strata of our national life. The outcome of these reforms is the gradual but steady re-orientation and changes in our ways of doing business. All told, the long-term vision of NEEDS is to make Nigeria the largest and strongest African economy and a major player in the highly competitive global market. The role of S and T in achieving all of the provisions of NEEDS cannot be overemphasised.

It is generally agreed that science and technology are the twin keys to progress and industrial growth in this increasingly knowledge-driven world. Most rapidly developing countries now devote an increasing proportion of their talents and resources to S and T and to the concomitant research and development (R and D) in the effort to attain a competitive edge, or to catch up with others. Nigeria's case cannot be an exception. That there is a very strong link between the performance of countries in S and T and their economic performance is no longer in doubt. For instance, the economic progress recorded in the 50 leading S and T countries is much higher that the rest of the world and while the average wealth per capita in these 50 countries grew by 1.1% between 1986 and 1994, the per capita income of the others fell by 1.5% over the same period. The rapid growth recorded recently in the East Asian region is largely attributable to growth in S and T activities within the region. Therefore we need to put our scientific efforts in the right perspective in order to stimulate national growth and development. This conference, quite correctly, will address the endogenous scientific efforts in the development of the Nigerian economy within the context of NEEDS.

The present administration of President Obasanjo has taken concrete steps through its active support and commitment to a number of flagship S and T programmes. These programmes include:

- Biotechnology.
- Information and Communication Technologies (ICT).
- Space Science and Technology.
- Engineering Materials Development.
- Diversification of nation's energy mix.
- Knowledge-based SME development.
- Promotion of partnerships and cooperation across public-private and domestic-foreign divides.

It is also on record that the present administration has significantly improved funding allocation to the Federal Ministry of Science and Technology (FMST) for the implementation of S and T programmes in the country. For instance, the FMST allocation improved from a little below ₦1.5 billion in 1999 to about ₦18 billion in 2005 representing over 1000% improvement.

Besides these efforts, the government has also initiated policies and strengthened agencies to carry out activities in support of various S and T based programmes. For instance, one of the sponsors of this conference NASENI has developed a Primary Science Kit (PSK) that enables primary school pupils perform over 40 scientific experiments from the mobile kit. The PSK initiative is supported by the UNESCO, UBE and ETF, and the programme is expected to be extended to the Junior Secondary Level Science very soon. NASENI has recently also been mandated to recruit and train first class Nigerian brains in the cutting edge field of Nanotechnology and Advanced Manufacturing.

The Raw Materials Research and Development Council (RMRDC), another parastatal under the ministry, is known to actively support R and D efforts and facilitates commercialisation of R and D results. The council produces a number of publications that highlight the nation's potentials and several of our endogenous S and T efforts. Some of these publications include *Commercialisable R and D Results in Nigeria*, the *Investment Profiles for Nigeria, Report on Survey of Agro-Raw Materials in Nigeria, Journal of Raw Materials Research, Bibliography of Science and Technology Literature* and *Directory of Equipment and Machinery Fabricators in Nigeria.* Interested participants in this workshop are invited to interact with both these agencies for possible future collaborations and networking.

I want to state here also that one of the landmark initiatives of the present administration is the proposal to institutionalize the NSF with initial endowment of US $5 billion before the end of 2006. When that comes on stream, it will have a profound and long-lasting impact on the way we carry out research and development activities in S and T in this country. Access to the fund will be through competitive bidding, open to Nigerians and Nigerians in the diaspora.

Beyond the endogenous efforts, Mr President has also designated the 25th of July every year as the Nigeria Diaspora Day. It is a forum designed to constructively engage the expertise of Nigerians in diaspora in a common effort of nation building. The date has been deliberately chosen to fall within the Annual Science and Technology Conference and is being co-ordinated by the Nigerian National Volunteer Service (NNVS). The First Diaspora Day was observed during the 2nd S and T Conference last July in Abuja and was attended by close to 300 Nigerians in the diaspora. Prior to that, the NNVS convened a major conference of Nigerian professionals in science and technology in Abuja in July 2005 as the first major effort to lay the groundwork for concrete and sustained interaction between Nigeria and her diasporans. The agency is presently working in partnership with the Nigerian in the Diaspora Organisation (NIDO) to create a database of Nigerian professionals in diaspora, which would facilitate easy access to the specialist skills and technologies that exist among Nigerians abroad that could be tapped by government and the private sector for national development efforts.

The government is committed to build on these achievements as it continues to search for new areas of opportunities. Meanwhile, as researchers we must take cognisance of S and T research paradigm shift now being promoted in the country. A research aimed at solving societal problems is better approached as collaboration among all fields of knowledge germane to solving such problems. Such a multidisciplinary research not only makes efficient use of human and material resources, it has been proven to better identify all the facets of a problem and proffer solutions with wider applicability. In future dates, the federal government will give top priority funding consideration to collaborative researches rather than narrowly conceived and fragmented individual researches. This conference should, among others, provide avenues for interactions that will result in networks of collaborative research activities in S and T in the country.

Science and technology has been universally accepted as critical tools in developing competitiveness at the firm and national levels through knowledge generation. Knowledge constitutes the most fundamental resource in emerging and modern economies, by which the process of economic wealth creation can be accelerated. This has provided the impetus for the current interests in knowledge capital, rather than physical capital accumulation as the driving force behind growth. The stock of scientific and technical knowledge (knowledge capital) can be factored into the knowledge generated within the nation (through endogenous scientific efforts), knowledge directly acquired from other nations (through foreign technical licenses, technical partnerships and the like) and the stock of technology spill-over created by knowledge generated by other nations. This conference is going to consider our endogenous scientific efforts in this direction. It is believed that the conference would touch on the critical areas on which S and T policy should be based i.e. human resources, scientific and technological infrastructure, and industrial infrastructure. For the stock of national knowledge capital as embodied in

technological capability to make meaningful contribution to national output, such knowledge has to be stored, coordinated, transmitted and utilized with the support of appropriate institutions in solving the nation's peculiar problems or meeting her peculiar needs.

Today in Nigeria, the bond between science and technology (S and T) and the society is still very weak and there are obvious gaps between activities of the scientific communities and the overall development aspirations of our society. As a nation, we have concentrated for a long time on aptitude but not enough on attitudes. We have concentrated for a long time on science and technology as subjects rather than as way of thinking to generate superior knowledge and solving problems in the society. In order to make the most of the abundant opportunities that S and T adoption can offer, it is important for us to develop an innovative culture. It is innovation that will help us strengthen the bond between S and T and society. This conference should find other new strategic approaches to further bridge the gap between S and T and the society. We have to ensure that as many of our people as possible appreciate indigenous technology, master modern technology and integrate them in their socio-economic activities, including education and service delivery.

The main link between scientific knowledge generation and improvement in the living standard of the citizens is through technical entrepreneurship. Technical entrepreneurship nurtures scientific knowledge into innovation whereby goods and services for meeting the needs of the society are successfully launched into the market. Many newly industrialised economies (NIEs) have effectively used small and medium scale enterprises (SMEs) in achieving this. Small and medium-size enterprises need to play leading roles in the development of new opportunities and the use of technology. Developing these enterprises requires developing endogenous operational, repair, and maintenance expertise and a pool of local technicians. Without this base, indigenous industries cannot scale up and the economy cannot benefit from science and technology.

In rounding up, it is hoped that during this conference, the various strategic areas of national development such as industry and industrial inputs, food security, primary health-care systems, economy, research-industry linkage and sustainable environmental management as addressed by the NEEDS document would be thoroughly x-rayed. It is expected also that we would have ample opportunity to evaluate our endogenous scientific efforts and develop new ways of improvement that would facilitate the achievement of the goals of NEEDS and ensure a productive national economy for improved quality of life for our citizens.

Finally, I would like to once again thank the organisers particularly the College of Natural Sciences University of Agriculture, Abeokuta (UNAAB), members of the Local Organising Committee, the Raw Materials Research and Development Council (RMRDC), National Agency for Science and Engineering Infrastructure (NASENI), industry-participants, non-governmental organisations, government agencies and the academia for your commitment in making this occasion possible. We, in the FMST, eagerly await the conclusions and recommendations from your deliberations.

I thank you all for your kind attention. God bless you and bless Nigeria.