COMSATS 1ST MEETING ON SCIENCE AND TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT (OCTOBER 8-9, 2001)

CONCLUDING REMARKS

The purpose of arranging COMSATS 1st meeting on Science & Technology for Sustainable Development was to share expert views of various scientists, technologists and researchers. This also served the purpose of discussing various roles and facets of science and technology. On the basis of these presentations, a number of conclusions and recommendations were made, which are briefly summarized hereunder:

- The 21st century is going to be a knowledge-driven century where, of all the resources, human resource shall assume greatest importance. Natural resources are as such no longer important in relation to the challenges and demands this century posed. It is how we transform them with the application of science and technology to fulfil our modern-day requirements that is significant. It is, therefore, important that knowledge and technology must go hand in hand. The excellence in basic scientific areas and their application in tandem with technology is the only way we can do away with the scourge of poverty in the developing world.

- Importance of Nuclear Technologies in relation to sustainable development cannot be overlooked. They have an enormous potential to address agriculture, human health and medicine, water resource, atmospheric and other issues related to sustainable development.

- Countries of the South should work together for poverty alleviation as the markets in the North will remain reluctant to address the real requirements of the poor and there is a dire need for indigenous absorption.

- From an educational research view-point, strategies should be developed so that universities are able to face the challenges from new emerging technologies. In this regard, there is an increasing use, significance and application of some emerging technologies likely to dominate the 21st century, like Nano-technology, Nano-medicine space technology, biotechnology & genetic engineering. There is also a need for the universities to have international collaboration in order to exploit new sciences and to equip them with upcoming technology.

- In this information age, IT is being applied in the fields like agriculture, health, education, human resource and environmental management, transport and businesses development. Communications and information technology have enormous potential, especially for developing countries, and in furthering sustainable development.

- To achieve prosperity, we need educated people and good infrastructure. In addition to this, the aim of achieving sustainability can be realized through the means of international cooperation.

- Importance of materials in the technological development process is very high, and no industry, machinery, or product can by-pass the thorough knowledge of the materials being involved in the process.

- Countries of the South have a variety of S&T policies on the part of their governments yet they failed to make an impact because these overlooked the concerns of the poor and rural people. It was stressed during the meeting that we must understand the concept of relationship between the society and S&T is different in the West. This is mainly due to their different rural and urban population distribution. Imported technologies are not only expensive but are also often ineffective in alleviating poverty in the South. Therefore, we need to rely on small sustainable technologies such as biogas prepared from manure and used for energy generation and cooking.

- An access to sound technologies is essential for sustainable development. The developing countries' need for the same is great, but it is hindered by the international technology transfer constraints. These impediments include lack of access to capital, a poorly developed banking sector, lack of long-term capital financing, high inflation rates etc.

- Technology transfer and adaptation require substantial investments and financing. These may come from either the public sector or private sector. The establishment of a venture capital fund and the creation of a technology transfer fund (TT & DF) may be the solution.

- There is an immediate need to indigenise technology at the grass root level to build rural economy as per environmental needs by rendering the much needed information and skills to farmers in agro processing and then supporting it with technical knowledge and financial help.

- Investment in high quality research endeavours would pave the way for a sustainable socio-economic development as the importance of quality of research is one of the most important facts in the quest for sustainable development.

- Biotechnology has huge potential for the developing countries, and its role in various fields like agriculture, medicine, genetics etc. is immense.

- Among other things, the critical area of restructuring R&D in Pakistan was also discussed. It was pointed out that the success can only be achieved in case drastic reforms are carried out within the R&D sector, and also if R&D organizations follow a "Demand Pull" rather than "Supply Push" strategy.

- In elaborating the role of planning for sustainable development, it was noted that the developing world is faced with common social problems and intricate economic issues such as those related to globalisation. The recommendations that were forwarded deemed regional integration and cooperation, capacity and infrastructure building for science and technology as essential ingredients for sustainable development.

- Communication is not merely a means of transferring news and information but in essence it also revolutionizes the whole human life. The advent of globalisation implies an access to information by people from around the world and the process has its attendant benefits and risks.

Based on the discussions and conclusions, a few recommendations are herewith forwarded for the reasons of their practicability and importance for developing countries:

COMSATS' RECOMMENDATIONS

COMSATS' appeals to the Countries of South to:

a. Allocate appropriate funds to make self-sustainable development a viable reality;

b. Foster short and long-term plans for implementing sustainable development, especially in Human Resources;

c. Undertake efforts to develop and introduce curricula that can integrate scientific, technological and liberal-arts education at all levels, so as to sensitise the public to the social dimensions of science as well as ensure their participation in development;

d. Take necessary steps to encourage the rapid development and induction of environment-friendly renewable-energy technologies;

e. Encourage pure and applied research in Biotechnology, in general, and agro-based technologies, in particular, so as to generate indigenous technology-based employment in the large rural areas of the

Third World;

f. Establish basic infrastructure in Information and Communications Technologies (ICTs), providing the population specially rural and remote areas to the global knowledge databases: national, regional and international markets, technology, raw material resources, etc. Governments should provide adequate support to ICT based companies through legislation, financing, as well as other enabling environment;

g. Encourage the growth and development of indigenous materials, as well as development of new engineering materials;

h. Following areas may be given top priority for accelerated growth and development:

   i. Human Resource Development (HRD) - Higher S&T Education
   ii. Information and Communications Technologies (ICTs)
   iii. Bio-technology / Agro-based industries
   iv. Water Resources