0788+

Distr.
LIMITED

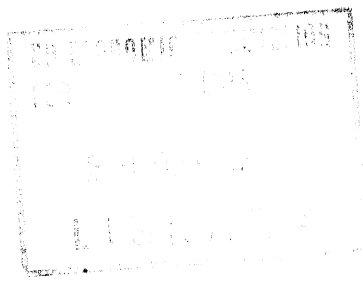
E/ECWA/NR/CONF.2/CP.8/Add.1
1 September 1978
ENGLISH
Original: ARABIC

UNITED NATIONS

ECONOMIC AND SOCIAL COUNCIL

ECONOMIC COMMISSION FOR WESTERN ASIA

Second Regional Preparatory Meeting
for the United Nations Conference
on Science and Technology for Development
12-14 September 1978
Amman, Jordan



Summary

of

The Kuwaiti National Paper on
The Application of Science and Technology to Development

78-2076

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SUMMARY

1. In the mid-fifties the State of Kuwait initiated an ambitious programme aimed at the utilization of scientific and technological methods to overcome geographic, social, economic and demographic constraints within the country through the application of its oil revenues, national will and human resources. This led to the achievement of tangible progress in all sectors of society within a relatively short period of time and there is no doubt that, had recourse not been made to science and technology, entire sectors such as the petro-chemical industries, sea water desalination plants, oil refineries, telecommunications and solar energy research would not have made their appearance in Kuwait. It should also be noted that, according to a report compiled by the Ministry of Planning, the contribution of science and technology during the period 1970-75 accounted for around 10 - 15 per cent of the overall increase in national income, the remainder being attributable to the increased employment of labour and capital.

2. In its future aspirations the State is facing a new kind of challenge manifested in the use of modern scientific and technological methods to diversify the economy, improve the quality of social services and reduce the extent of dependence on foreign manpower. These objectives differ from those set during the past two decades in so far as they indicate a shift of emphasis from quantitative to qualitative development. In the past there was a need to acquire greater quantities of everything whereas the present requirement is for the provision of better services and equipement to serve specific purposes. Hence, the choice of appropriate scientific and technological methods is a matter of far greater importance than at any time in the past.

3. In general, the Kuwaiti economy is dependent on scientific and technological means as represented by capital goods. This is due to the small size of the local market, the shortage of scientists and engineers and the inadequacy of the scientific and technological infrastructure normally required for industries relying on research and intensive development. In the case of skilled labour, however, the situation is different since the country is becoming less dependent in this respect. One of the main reasons for this is the influx of skilled personnel since Kuwait has been able to attract a number of eminent Arab scientists who lived and worked for long periods in the United States

of America and other Western countries. A further factor which has helped in this regard is the considerable increase in the number of young Kuwaitis pursuing their studies abroad.

4. The Government has been able to facilitate the transfer and development of technology by creating an open society characterized by freedom of choice in the field of employment, promoting the establishment of local scientific and technological institutions, providing the necessary funds for studies related to the application of science and technology and investing in modern scientific and technological equipment.

5. The remaining fundamental obstacles lie in the shortage of manpower and the inadequacy of the requisite infrastructure. The shortage of manpower in fields related to science and technology represents the main problem in almost all the development sectors. In spite of the tangible achievements made in expanding the educational sector, eradicating illiteracy etc. the demand for labour still exceeds the available supply. With regard to infrastructure the demand for these services (roads, hospitals, ports etc.) has grown at a faster rate than these developing facilities can cope with. Other impediments include the role of values, social systems, feedback operations and public awareness in furthering the application of science and technology for development in addition to the unsophisticated information systems which contribute to the constraints imposed on the quality and range of information exchanged between the developers and users of technology.

6. One of the obstacles having a clear and tangible effect on the community is the limited application of scientific techniques in problem areas such as the development of water resources, traffic congestion and the management of fishery resources.

7. In view of the considerable expansion taking place in scientific and technological fields and the need for support for and co-ordination among local scientific and technological institutions, the establishment of a national scientific and technological policy making centre is an urgent requirement.

8. At the national level a series of recommendations are put forward of which the following are the most important:

(a) Setting an order of priority for national objectives and scientic and technological policy in accordance with national requirements,

(b) The establishment of mutual compatibility between man and science and technology in the sense that man will be able to keep in harmonious step with the machine and that machine will not cause detriment to the environment or to social values and systems etc,

(c) The formulation of short and long-term policies for the development of manpower.

9. At the regional level many advantages could be gained through mutual co-operation, especially in fields of common benefit. For example, we could mention the possibility of initiating an intensive research and development programme in the field of natural resources (such as oil, natural gas, solar energy, sea water desalination and the management of fishery resources).

10. At the international level Kuwait affirms its support for the principles of the new international economic order and the code of conduct for the transfer of technology. Possibly one of the most important issues with regard to the Kuwaiti economy at the present time is the provision of an efficient, low-cost system for the dissemination of information at the international level.