

SCIENCE and technology are receiving a new emphasis in the Arab world, partly as a result of the increased wealth of the oil-rich countries. The new source of wealth has made possible educational and research facilities, new institutions and programmes hitherto out of reach for most of the countries in the area. The first Conference of Ministers of Science and Heads of National Science Policy Organisations of the Arab States was held in Baghdad last year, and an Arab League Educational, Cultural and Scientific Organisation (ALESCO) has been formed in recent years to promote Arab culture, including science and technology. A number of Arab states have formed—or are forming—science policy machinery and programmes, emphasising applied research.

Egypt has traditionally been the most advanced Arab nation in science, and has built up a large pool of professionals who are much in demand in other Arab states. Iraq, which today has an ambitious five-year science plan, takes a distant second place. But while Egypt is poor, Iraq is now rich, and any promising research project can obtain funds there. Yet, ironically, Iraq is poor in personnel.

Trained personnel, in fact, are the main need of the Arab countries generally. Countries relatively rich in scientific manpower—Egypt, Lebanon and Jordan—are supplying the rest with personnel. Countries like Kuwait and Saudi Arabia are busy building laboratories and universities and advertising openings for staff.

Because of the wide differences in resources between the Arab states, Dr Ibrahim R. Shimi, head of the chemistry department in Ain-Shams University, Cairo, has proposed that a research council be established in the League of Arab States to which member states should allocate a proportion of their GNPs. This council would set up specialised research centres dealing with problems common to the area as a whole, such as cultivation of arid lands and desalination of sea water.

The Arab countries' experience with science policy formulation is varied. Egypt's has been complex, and began with its Science Council, established in 1956. The Science Council produced a national research plan for the universities, the new National Research Centre laboratories and the specialised institutions belonging to the ministries.

This council was superseded in 1961 by the Ministry of Scientific Research. In 1965, the Supreme Council of Scientific Research came into existence—but it was short lived and was replaced by the Ministry of Scientific Research in 1968. The Ministry in turn was replaced in 1971 by the Academy

of Scientific Research and Technology. The president of the academy, at present, Dr A. Abou-El-Axm, has ministerial rank and is responsible to the Prime Minister.

The academy not only formulates science policy but supports research and technology through grants. It also coordinates major projects, participates in development of science curricula, supports scientific conferences, and organises scientific publications and the popularisation of science, among other things. In addition, it is responsible for a number of research institutions in such areas as atomic energy, oceanography, petroleum and metallurgical research, and research on bilharzia.

The Arab World science revival

from David Spurgeon



Grain sorghum research, Lebanon

By comparison, Lebanon's history of science policy has been uncomplicated. It began in 1962 with the establishment of the National Council for Scientific Research (NCSR), and this single body not only was the first science policy-making body, but has continued as the sole one. The situation is further simplified by the fact that the same body that formulates policy also sees that it is carried out.

Lebanon went about its science policy planning deliberately and directly. The underlying assumption was as stated in its Five-Year-Plan for the Organisation and Development of Scientific Research in Lebanon:

"Lebanon is a small country with limited human and material resources. Its aspirations, whether for a higher standard of living or an enhanced cultural standing, can therefore only be conceived and implemented through utilisation of its resources, human and material, at the maximum possible

efficiency."

The NCSR therefore went about setting up the national science plan by first asking the Ministry of Planning what the country's overall objectives were. It promptly received a reply listing: maximum regular increase of the national income; equitable distribution of the national income among citizens; full employment; establishment of an equilibrium among the various economic sectors; and rational distribution of the population over the territory of Lebanon.

Eighty per cent of the plan deals with oriented research according to priorities carefully and simply laid out; 20 per cent deals with non-oriented or basic research. Themes accorded top priority are Lebanese climate, conservation of the natural milieu, health and disease in Lebanon, housing, and what are called "the essentials of productivity"—Lebanese raw materials, soil and water, and marine resources. NCSR's 1973 budget was 5,250,000 Lebanese pounds.

Some examples of the projects funded by the NCSR illustrate the strongly practical philosophy behind the plan: development of a high-protein, vitamin and mineral biscuit for low income groups; the study of Lebanese plants used in folk medicine with the aim of isolating and analysing their active elements with a view to their exploitation or synthesis; the industrial production of fish and molluscs using recycled human wastes; and research on processing of surplus fruit crops.

Joseph Naffah, Secretary-General of the NCSR, says that the practical orientation was adopted partly to attract attention to the accomplishments of science and to improve the climate of research, because in Lebanon, "the scientist is not respected in the sense that the self-made man is respected".

There is also a surprising amount of attention being paid to the popularisation of science. Salah Gelal, science editor of Cairo's newspaper *Al Ahram*, heads a staff of 12 science reporters and, with the financial backing of his newspaper, organises science clubs and fairs for Arabic youth. Last year, in Baghdad, UNESCO and the Union of Arab Broadcasters sponsored a meeting on the popularisation of science, and training symposia have been held and attended by representatives of a number of Arab countries. In fact there seems to be a growing realisation that the real costs of the area's long involvement in war include not only lost lives and material waste, but also a retardation of national development. The Arab states see a revival of science as essential to the fulfilment of their nation's potential. □