TECHNICAL ASSISTANCE - HELP AND SELF-HELP

For nearly ten years the Agency has been providing technical assistance to promote progress in developing countries. About $20 million have been spent in various ways. Has help of this nature served any practical purposes? In this article Mr. Oliver Lloyd, of the IAEA Division of Technical Assistance, expresses his own views of the Agency's role in furthering technological development, and suggests future possibilities.

Bilateral technical assistance started with the Romans and has carried on in various forms to the present day. Multilateral assistance, a mere fraction of bilateral aid, may really be said to have started only after the last war. It was immediately after it that the present concepts, and practices which flow from them, were evolved.

Between 1946 and 1949, in a series of discussions between government representatives to the Unied Nations, a set of principles of multilateral technical assistance to be provided under the auspices of the United Nations was drawn up and codified in a resolution of the Economic and Social Council of 1949. These principles have been maintained to this day and the only changes are in emphasis and detail. The basic ones are:

1. Any assistance for economic development of underdeveloped countries shall be rendered only in agreement with the governments concerned and on the basis of requests received from them.

2. The kinds of services shall be decided by the Government concerned.

3. The assistance furnished shall not be a means of foreign economic and political interference in the internal affaits of the country concerned and

4. It shall be given only to or through governments and be provided as far as possible in the form which that country desires.

These principles have been used by all members of the United Nations family who operate direct aid or, as we know it, technical assistance programmes to their member states. Basically, the aid is given to fill a gap that the recipient government cannot meet from its own resources. It is a self-help programme in which the recipient government accepts certain financial and other obligations in respect of the aid given. It is not capital aid and takes the form of the provision of expert services, training facilities and equipment for demonstration purposes. It is therefore advisory and to a less extent contractual. Theoretically, any Member State is eligible to receive this aid. In practice, they must declare

themselves economically developing. This means that all countries in Central and South America, the Middle East (except South Africa), Asia (provided they are members of the Agency or the UN) and S.E. Asia and some in Europe may receive aid.

In 1958 when the Agency embarked on its technical assistance programme in the highly specialized field in which it operates, it was clearly essential to ascertain the present stages of development of atomic energy in developing countries and the manner in which the Agency could best assist that development. Countries were at different stages; some had made no start whatsoever; others had research reactors and some were applying atomic energy in, for example, hospital and agricultural services.

The Agency therefore established missions composed of some six scientists covering various disciplines who visited different countries and drew up an inventory of the existing situation and the gaps which might be filled by assistance. Between 1959 and 1962 nine missions visited 45 countries, and it was on the basis of the findings of these missions that the subsequent technical assistance programmes have emerged. A similar multi-disciplinary approach has been used by the World Bank in its missions arising from loan requests, but it had not previously been used in such a narrow field. The preliminary missions have been followed up by smaller missions sent some three years later and repeated approximately every two years thereafter. This helps to bring the Agency nearer to its member states and also ensures that the maximum impact wil be made on the economic development of the country concerned, since they prevent a duplication with, say, bilateral aid and also make it possible to formulate project requests (and it is the lack of properly formulated projects which is hindering economic development) in the manner best suited to meet the existing situation in the country.

What are the actualities? The Agency's technical assistance programme is now nearly ten years old. During that time about $20 millions has been spent on the services of nearly 900 experts in 60 countries, on the award of more than 3,000 fellowships and the provision of nearly $4 million worth of equipment associated with the expert assignments. About 50 % of the funds, as would be expected in a new science, has been spent on training, 30 % on experts and 20 % on equipment. This ratio, as atomic energy programmes develop, is of course changing and more is being spent on experts and equipment as the fellows return to their country and participate in the development of the national programmes. An analysis of the work performed and the assistance given reveals that about 25 % has been devoted to the first practical contribution of nuclear science to national welfare or economy and about 75 % was given to help research programmes or was devoted to the practical applications of atomic energy which had already been established in the country.

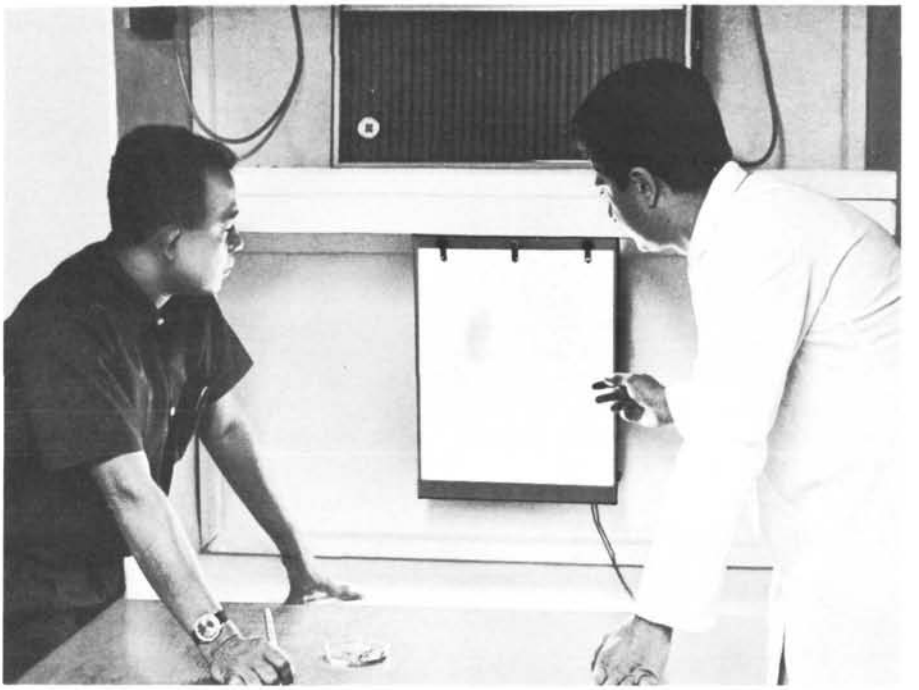
In what areas do governments request help? As to be expected an examination shows the significance of agriculture in the economy of developing countries with an emphasis on the practical applications of atomic energy on food preservation, crop increases, water availability and such like. Health, engineering and education also receive a fair share.

Assembling electronics equipment at the Bhabha Atomic Research Centre, India, where the Agency is assisting various activities, among them hydrological studies and the use of radiation in food preservation. Poto: UNITED NATIONS

How is all this paid for? The Agency gets its money partly from the United Nations Development Programme in New York and partly from a voluntary contribution to the General Fund of the Agency. We are now spending about 3 million dollars a year on technical assistance; if we met all the needs expressed every year by governments we would need nearly 6 million dollars and even more in the years to come. In short we have half the resources we need.

Natural, financial, and manpower resources are very scarce in most developing countries and must be utilized to the maximum; projects must therefore be planned **in situ** by governments aided where appropriate by the Agency. Unless projects in economic and social (by which is meant education and training) development plans are coordinated and phased as an integrated whole, the resulting imbalance will have the reverse effect on the economy of the country from that intended in the Development Plan. It is therefore essential that governments and the Agency recognise the need for integrated programme planning and implementation.

This means in practice that, for example, a research reactor in a developing country, unless it is completely integrated into the educational and research



Dr. R. Höschl (Czechoslovakia), an IAEA expert, discusses a kidney photoscan with his counterpart, U Soe Myint, at the Rangoon General Hospital, Burma. Agency equipment, including a Shimadzu scintiscanner, and expert advisory services have been provided under the United Nations Development Programme. Photo: UNITED NATIONS

programme of the country, can easily become a white elephant. In addition, its thirst for scientific manpower can tend to divert scientists from higher priority work. The development therefore of an atomic energy programme in a developing economy must be integrated with and interwoven into the programme of national technical services. Experience has shown that the most successful projects which have been helped by the Agency are those which form part of larger industrial, agricultural, or social schemes.

At first glance it may seem, to say the least, curious that some developing countries who may even lack some of the basic administrative and social services should embark on a programme involving the applications of atomic energy with its sophisticated infrastructure. But it is the governments of these and other developing countries who rightly fear the increasing technological gap between themselves and the advanced and highly developed countries. Even modest beginnings in health and agricultural services tend to lessen that gap; apart from the obvious benefits to health and scientific research these and other applications are making available opportunities in the country to study and apply nuclear science and help to bring an awareness of science and its benefits to a developing society. If it can be shown in practical terms, and it is being

shown, that modern science has a role in everyday life and can be easily adapted for use in more primitive conditions than those in which it was developed, some steps may be said to be being made in preventing a brain drain from the lesser developed countries.

The last 20 years have shown the great technical reliance which has to be placed, and paid for, on technical advances made in sophisticated institutes in the developed quarter of the world. It is therefore desirable that the developing countries should establish their own institutes and make their own discoveries and developments, thereby relieving themselves, amongst other things, of the necessity of paying for patents.

It is possible that increasing emphasis will be placed on regulatory and inspection functions. It will certainly be agreed that what can be termed "welfare activities" as exemplified in the technical assistance programme are an essential concommitant of its other activities. No government will survive solely on the programmes of its Ministries of Defense and the Interior. Similarly, no international organization can play a useful role unless it can offer concrete evidence of welfare and assistance, particularly to its less fortunate member states.

LEARNING ABOUT LIFE PROCESSES

Knowledge of the ways by which cells of the human body counter disease or injury by forming new cells, and of the effects on them of radiation, has advanced as a result of research reported during a symposium in Monaco organized by the Agency in cooperation with the Joint Commission on Applied Radioactivity.

More than 100 scientists from 20 countries, as well as from the World Health Organization and EURATOM, attended. The subject was "The Effect of Radiation on Cellular Proliferation and Differentiation", and as a result of the discussions, lines of approach for future investigations into the ways in which new cells originate and become specialised in their function were indicated. In the haemopoietic system the body can create both red blood cells responsible for circulating oxygen and white blood cells which fight against infection and poisons; mechanisms controlling these processes are the subject of research in many countries. This research has already had considerable influence on medical treatment including transplant surgery.