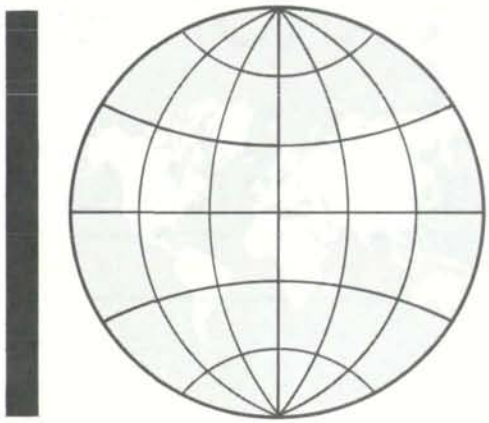
Technical Assistance Given Around the World



The Agency initiated a regular programme of technical assistance immediately after the conclusions of the first session of its General Conference in 1957. Its main objectives are to promote the transfer of skills and knowledge relating to the peaceful uses of atomic energy, to support the efforts made by recipient countries to carry out their nuclear energy activities more efficiently and safely, and to ensure that the knowledge acquired can continue to be applied after Agency projects have been completed. The components of its technical assistance programme follow the usual pattern and cover the provision of expert services, equipment and fellowships.

Since 1958 the Agency has provided the services of more than 1800 experts valued at $11.5 million, 4300 fellowships valued at $14.3 million, and equipment worth $10.8 million.

Technical assistance programmes are financed by the following resources at the disposal of the Agency:

(a) Voluntary cash contributions (regular programme);
(b) Gifts in kind in the form of services of experts, equipment, and fellowships at institutions in donor Member States (regular programme);
(c) Funds allocated to the Agency to carry out projects under UNDP; and
(d) Funds allocated to the Agency to implement projects under bilateral and funds-in-trust arrangements.

As funds (a) and (b) are more limited in volume, they are frequently used as "seed money" to initiate programmes and projects which can be continued later under the United Nations Development Programme (UNDP).[1]

It should be noted that cash contributions to the General Fund for 1973 amount to 93.3% of the target of $3.0 million, the highest percentage ever achieved since the inception of the programme.

All developing Member States are eligible to receive technical assistance; developing Non-Member States are also eligible for assistance from the Agency under UNDP, provided that they meet the main criteria of that programme.

[1] IAEA also acts as executing agency for projects within its competence financed under UNDP; at present these include large-scale projects in the following ten countries: Argentina, Brazil, Chile, Greece, Hungary, India, Rep. of Korea, Morocco, Pakistan and Romania.

Sheep flock below the Himalayan glaciers at Sanamarg in Kashmir. Funds are being provided under the Agency's Technical Assistance programme for radiation attenuated vaccine against sheep lungworm. ▶

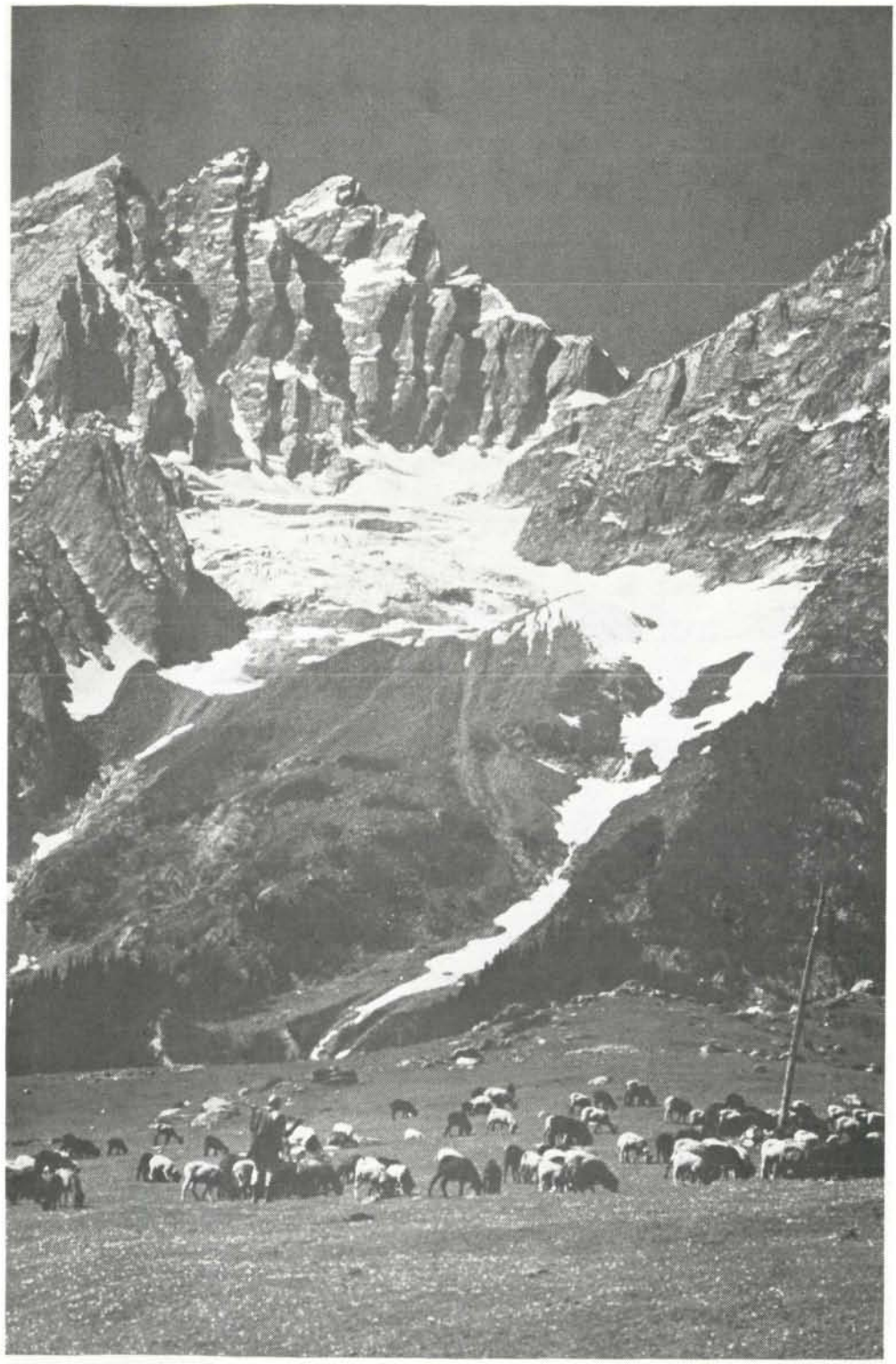
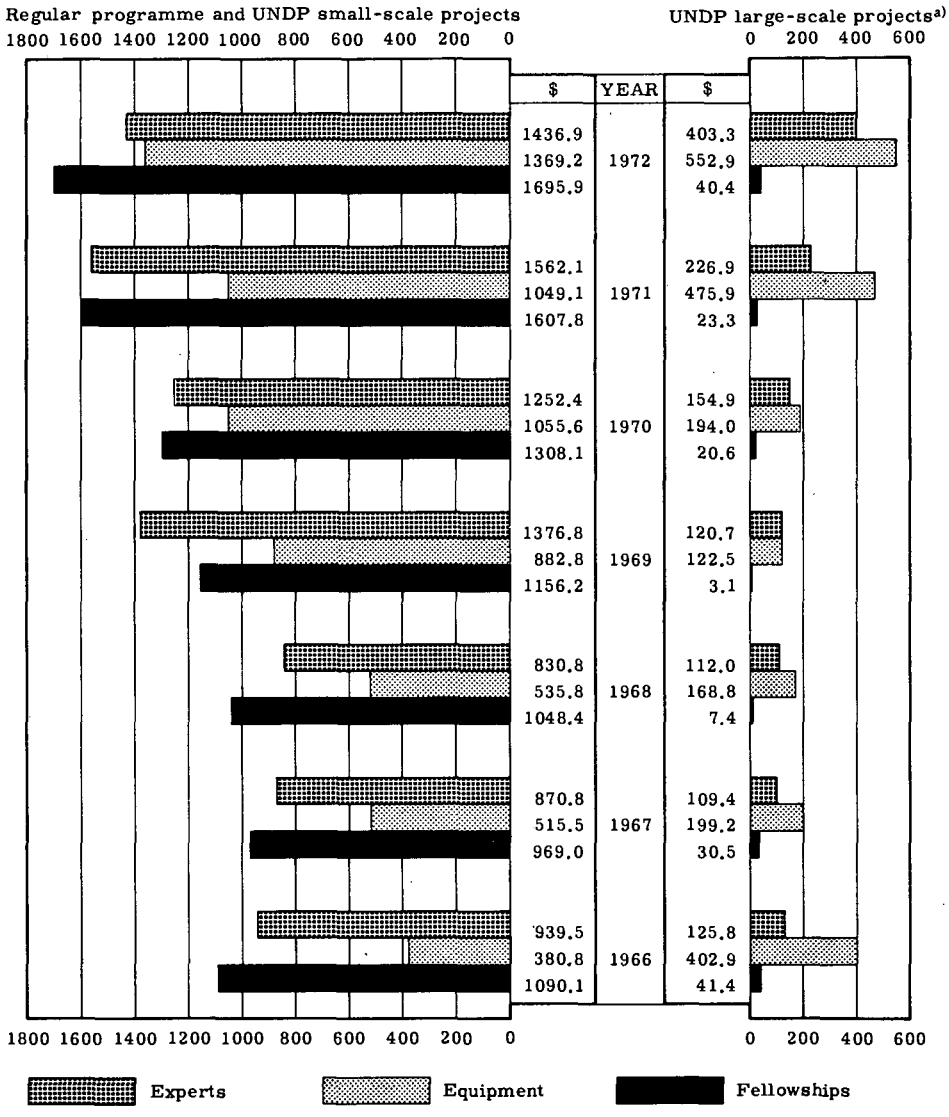


Figure (1) shows the trends in the technical co-operation activities of the Agency during the period from 1966 to 1972. The left side of the chart summarizes the small-scale projects, and the right side the UNDP large-scale projects executed by the Agency.

FIGURE 1

TRENDS IN THE TECHNICAL CO-OPERATION ACTIVITIES OF THE AGENCY
(in thousands of dollars)



a) The UNDP large-scale project figures given above in respect of experts and equipment include expenditures on sub-contracts and miscellaneous project costs; these amounted to $280 500 in 1966, $129 300 in 1967, $76 200 in 1968, $70 500 in 1969, $1 100 in 1970, $35 100 in 1971 and $203 800 in 1972.

A short review of the elements of IAEA technical assistance brings to the fore some points of interest which vary somewhat from the general pattern of technical assistance practices within the UN system.

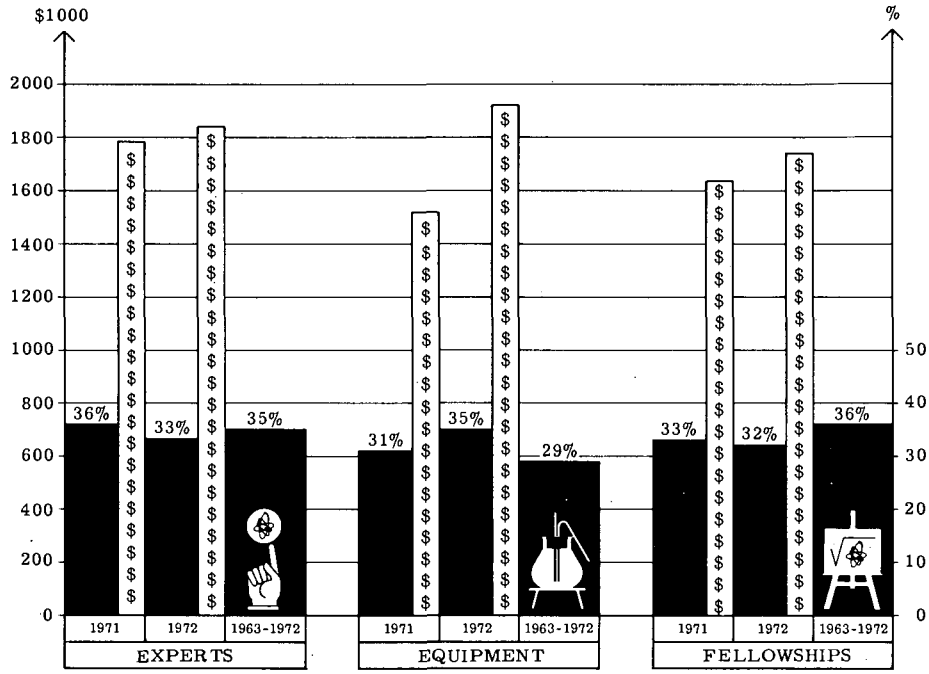
Experts, Visiting Professors and Lecturers:

Upon request, experts can be sent individually or in teams to advise on or assist in general or specific fields of activity within the Agency's competence. The Agency's experts quite often come from national atomic energy authorities or research institutions, and in many cases are well-known in their field. It is therefore not always an easy task to find the right expert, who can also be spared from his own work for some time. Every mission is thus preceded by a series of consultations, with the recipient country, the expert-to-be and his employer. A problem of re-employment upon termination of the mission has never occurred. The table below, showing the fields of expertise requested, is also indicative of the general introduction of nuclear energy in developing countries. The drop in the total number for expert help requested in 1972, compared to the previous year, was mainly due to the cut-back by UNDP in its very large 1971 training programme, which required 157 lecturers in that year and only 14 in 1972. Similarly, this explains the drop in fellowships granted in 1972, as shown in the chart on P. 8.

Field of activity	Year						
	1966	1967	1968	1969	1970	1971	1972
General atomic energy development	26	16	23	25	18	8	11
Nuclear physics	34	18	14	28	28	29	16
Nuclear chemistry	10	10	12	21	18	14	15
Prospecting, mining and processing of nuclear materials	6	8	3	6	14	20	20
Nuclear engineering and technology	36	16	24	33	33	64	31
Application of isotopes and radiation in agriculture	39	35	53	61	88	104	74
Application of isotopes and radiation in medicine	31	28	29	17	23	37	17
Application of isotopes and radiation in biology	9	13	1	14	11	16	15
Other fields of application of isotopes and radiation	17	14	18	21	27	51	28
Safety in nuclear energy	10	25	23	19	17	23	14
Total	218	183	200	245	277	366	241

The equipment provided by the Agency is usually accompanied by an expert to supervise its installations and demonstrate its use. In the early years of the Agency's programme, the main emphasis was on help in training. In more recent years, as countries improved their own infra-structure, more and more assistance has been given in the form of equipment and experts' services, as can be seen in **figure (2).**

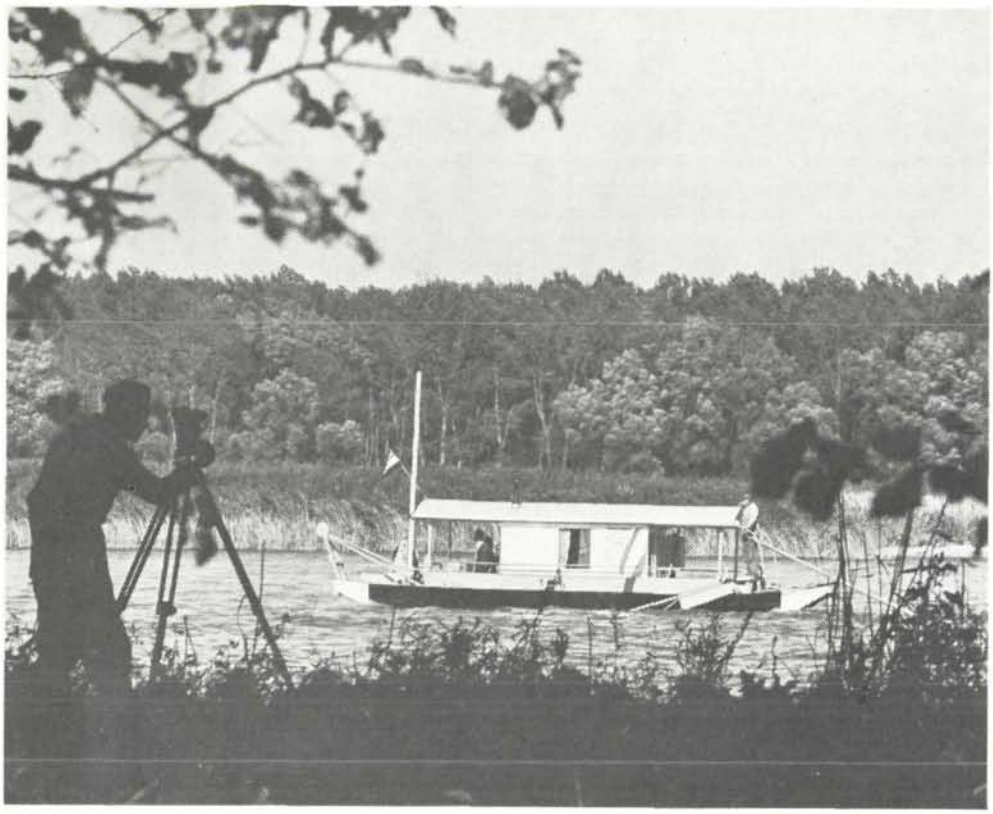
FIGURE 2
DISTRIBUTION OF TECHNICAL ASSISTANCE BY TYPE OF ASSISTANCE
(1971, 1972 and 1963-1972)



Type	1971		1972		1963 - 1972	
	%	$1000	%	$1000	%	$1000
Experts	36	1789.0	33	1840.2	35	12423.5
Equipment	31	1525.0	35	1922.1	29	10041.3
Fellowships	33	1631.1	32	1736.3	36	12634.8
Total	100	4945.1	100	5498.6	100	35099.6

Note: Fellowships include participants in short-term training projects.

The Agency has adopted a somewhat more flexible policy in supplying equipment, taking into account resolution 64 passed at the General Conference in 1960, which in view of the special character of the Agency's operations requested the Board of Governors to give special and sympathetic attention to providing equipment to those States which desire it. As indicated in the table below, the equipment component at present represents up to 35% of the total volume of assistance provided.



Investigation of water movements in the Danube was carried out under a Research Contract programme awarded to the Research Institute for Water Resources Development, Budapest, Hungary.

IAEA TECHNICAL ASSISTANCE (REGULAR PROGRAMME & UNDP)
(in thousands of dollars)

Year	Total assistance	Equipment	% of total
1963	2,589.7	584.5	22.6
1964	3,209.1	874.1	27.2
1965	2,827.3	673.7	23.8
1966	2,980.5	783.7	26.3
1967	2,698.4	718.7	26.6
1969	2,703.2	704.6	26.1
1969	3,622.1	1,005.3	27.5
1970	3,985.6	1,249.6	31.4
1971	4,945.1	1,525.0	30.8
1972	5,498.6	1,922.1	35.0
Total	35,099.6	10,041.3	28.6

Fellowships:

Under its own regular programme the Agency's record of fellowships tends to be considerably larger than is usually the case. Fellowships range from a period of a few weeks up to a maximum of twelve months, with the exception of a few long-term fellowships. They are available to qualified applicants at all educational levels and not only restricted to university graduates.

The IAEA has conducted a survey of fellows who completed their training during 1959-1963 in order to examine the relationship of subsequent employment at home to the training received. It was found that only about 7% of the fellows reported that their subsequent work was unrelated to their training. It is interesting to note that the fields in which most fellowships were requested correspond to those in which most experts have been required, i.e. nuclear technology and agriculture.

TECHNICAL ASSISTANCE FELLOWSHIP AWARDS, SCIENTIFIC VISITS AND TRAINING COURSE PARTICIPANTS, BY FIELD OF STUDY

Field of study	Year						
	1966	1967	1968	1969	1970	1971	1972
General atomic energy development	40	20	25	49	64	24	7
Nuclear physics	119	52	63	63	102	110	56
Nuclear chemistry	21	28	34	35	29	36	27
Prospecting, mining and processing of nuclear materials	8	17	17	27	44	14	14
Nuclear engineering and technology	91	72	81	87	105	141	103
Application of isotopes and radiation in agriculture	66	51	79	98	135	162	152
Application of isotopes and radiation in medicine	66	45	66	34	67	78	37
Application of isotopes and radiation in biology	35	46	18	20	21	33	46
Other fields of application of isotopes and radiation	51	30	30	26	57	100	23
Safety in nuclear energy	22	52	43	46	31	41	48
Total	519	413	456	485	655	739	513

Trends:

Each year a number of requests is found to be technically sound, but cannot be met because of lack of funds by the Agency. These requests are then brought to the attention

of technically advanced Member States with the hope that some of them will be met on a bilateral basis. The following table shows the value of assistance and the percentage of requests met over a period of time:

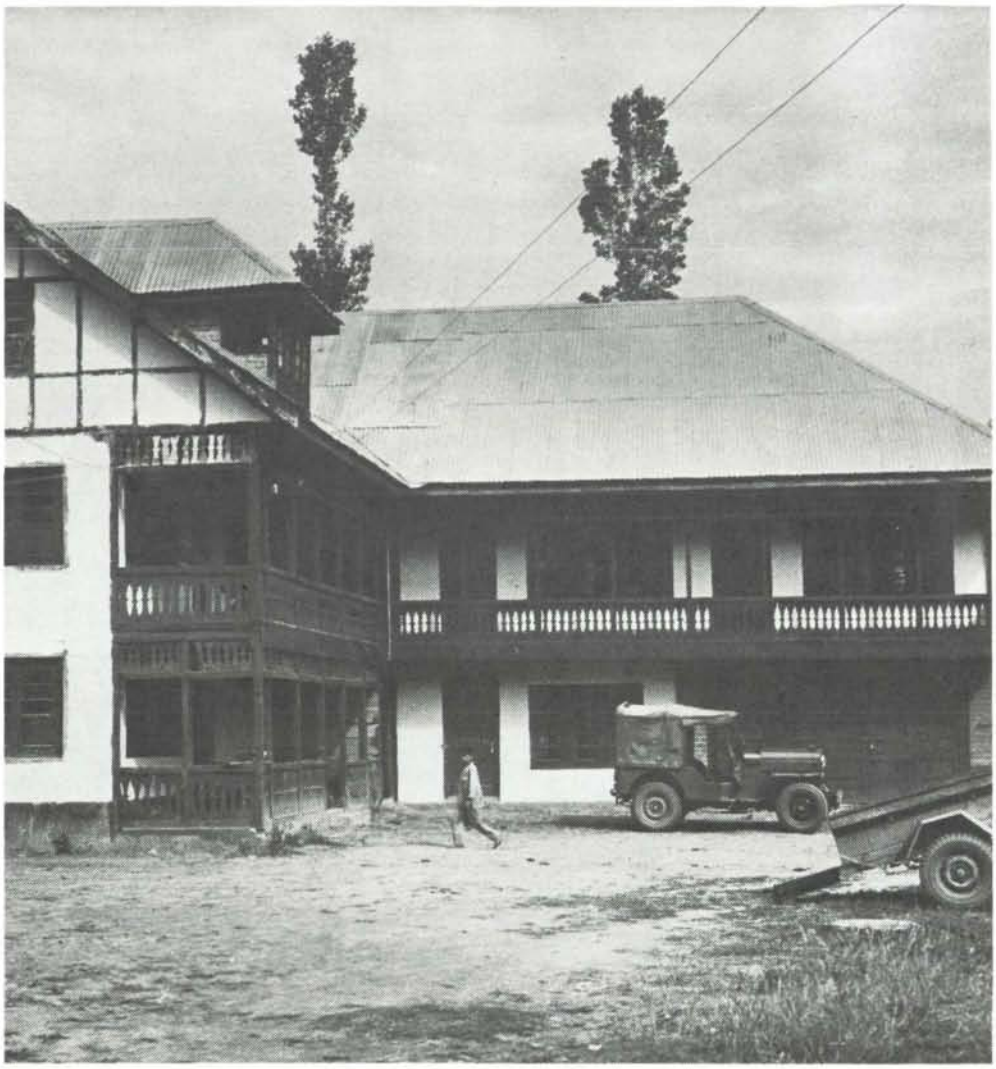
EXPERTS AND EQUIPMENT: 1969 - 1973

Year	Value of requests received (in thousands of dollars)	Value of assistance approved (in thousands of dollars)	Percentage of requests met
1969	3700	977.0	26.4
1970	3400	1250.0	36.8
1971	3600	1891.0	52.5
1972	5268	2123.6	40.3
1973	5657	2279.0	40.3

It can be seen from the change of emphasis in the fields for which technical assistance, experts and fellowships are requested, that the major applications of nuclear technology are slowly moving away from the basic educational and small-scale applications, such as nuclear physics and the production of isotopes for medical purposes. Instead the trend now is towards nuclear engineering and a study of technology orientated towards the introduction of nuclear power and nuclear applications in agriculture. Therefore it seems that the work of the IAEA, in line with the general needs of world development, is towards the two necessary future goals, food and power. At present, eight of the Agency's Member States[3] receiving technical assistance have nuclear power stations in operation or under construction. Many others, foreseeing the shortage of conventional power sources in the coming years, are carrying out feasibility studies. The process of introducing nuclear power is a long one and requires the State concerned to start planning at least eight or ten years before a nuclear power plant will go into operation. In preparation for this work the technical assistance programme is being increasingly utilized by Member States for checking the time scale of the preliminary study, for helping the Government concerned to choose a suitable consultant engineering firm which will prepare a feasibility study, for supervising the construction work and for the essential training of personnel.

The financial situation with which all multilateral aid programmes are confronted is giving concern, and the Agency's regular programme is no exception to this rule. UNDP's Administrator has recently noted that: "Programme costs in dollar terms expressed as a percentage from one year to the next show minuscule increases... Such increases in real terms represent a static or slightly declining programme, taking into account

[3] Argentina, Brazil, Bulgaria, India, Rep. of Korea, Mexico, Pakistan, Philippines.



The accommodation rented by the Technical Assistance programme in Srinigar, Kashmir, to house the new lungworm vaccine production unit.

the effects of mandatory cost increases of inflation". – It is evident, no matter whether we look at the resources available to the IAEA for its technical assistance, or at the total resources available to the UNDP for its execution of all its programmes, that unless there is a substantial increase in those resources in the near future, there will be less technical assistance provided. Similar fears were expressed by the Director General this year at the United Nations General Assembly: "It looks at present as if we may achieve 102% of the 1974 target, which would be something of a United Nations record. Nevertheless, due to the monetary situation, it will be necessary to seek a substantial increase in the target for 1975 to cover the ground lost in the last few years."