

THE PROVISION
OF TECHNICAL ASSISTANCE
BY THE AGENCY
WITH SPECIAL REFERENCE
TO 1979

Report by the Director General

GC(XXIV)/INF/191

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INTERNATIONAL ATOMIC ENERGY AGENCY

PREFACE

Following its usual practice, the Board of Governors has requested the communication to the General Conference of the material it used in reviewing the provision of technical assistance by the Agency, with special reference to 1979; this material is accordingly reproduced in the present document. The review was carried out pursuant to paragraph 19 of the Revised Guiding Principles and General Operating Rules to Govern the Provision of Technical Assistance by the Agency¹.

The use of the resources placed at the Agency's disposal, in the form of voluntary contributions, gifts in kind, multi-bilateral funds and UNDP funds for the provision of technical assistance, is reviewed in this document.

The three principal elements of the technical assistance provided are expert services, equipment and fellowships. The main objectives of the assistance 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 atomic energy activities more efficiently and safely, and to ensure that the knowledge acquired can continue to be applied after the provision of assistance by the Agency has been completed. The achievement of the latter objective, however, depends largely on the ability of Governments to make adequate facilities available and to recruit and retain the requisite number of qualified staff.

¹ INFCIRC/267.

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LIST OF ABBREVIATIONS

Agency	International Atomic Energy Agency
CNRET	Centre for Natural Resources, Energy and Transport of the United Nations
IAEA	International Atomic Energy Agency
IANEC	Inter-American Nuclear Energy Commission of the Organization of American States
IEA	International Energy Agency of the Organisation for Economic Co-operation and Development

IFFIT	International Facility for Food Irradiation Technology
IIASA	International Institute for Applied Systems Analysis
JINR	Joint Institute for Nuclear Research
SIDA	Swedish International Development Authority
UNDP	United Nations Development Programme

Byelorussian SSR	Byelorussian Soviet Socialist Republic
Congo, P.R.	People's Republic of the Congo
Dem. Kampuchea	Democratic Kampuchea
Dem. P.R. Korea	Democratic People's Republic of Korea
German D.R.	German Democratic Republic
Germany, F.R.	Federal Republic of Germany
Korea, R.	Republic of Korea
Libyan A.J.	Libyan Arab Jamahiriya
St. Kitts	St. Kitts-Nevis-Anguilla
Syrian A.R.	Syrian Arab Republic
Ukrainian SSR	Ukrainian Soviet Socialist Republic
USSR	Union of Soviet Socialist Republics
U.A. Emirates	United Arab Emirates
UK	United Kingdom of Great Britain and Northern Ireland
U.R. Cameroon	United Republic of Cameroon
U.R. Tanzania	United Republic of Tanzania
USA	United States of America
Yemen, P.D.R.	People's Democratic Republic of Yemen

NOTES

All sums of money are expressed in United States dollars.

The technical assistance described in this report is classified under the following ten fields of activity:

<u>Code</u>	<u>Field of activity</u>
0	General atomic energy development
1	Nuclear physics
2	Nuclear chemistry
3	Prospecting, mining and processing of nuclear materials
4	Nuclear engineering and technology
5	Application of isotopes and radiation in agriculture
6	Application of isotopes and radiation in medicine
7	Application of isotopes and radiation in biology
8	Application of isotopes and radiation in industry and hydrology
9	Safety in nuclear energy

Part I. GENERAL OBSERVATIONS

1. The total resources available to the Agency to carry out its technical assistance activities in 1979 increased by \$2 474 000, or 16.5%, to \$17 502 000. The lower rate of increase as compared with 1978 is due to a decline in extrabudgetary funds as explained in paragraph 35. Substantial increases occurred in funds available from voluntary contributions, UNDP and in-kind resources. Agency funds (voluntary contributions and miscellaneous income) constituted one half of total available resources, a share which has remained fairly constant during recent years.
2. The total amount of technical assistance provided from all sources rose by nearly 20% to \$15 578 000. Although this is less than half the exceptionally steep growth-rate which was observed in 1978, it should be noted that the unliquidated obligations and the in-kind assistance outstanding at the end of 1979 totalled \$11 590 300, which is 70% higher than at the end of 1978. The sharpest increase, 55%, took place in the assistance financed from extra-budgetary funds, followed by UNDP with an increase of 37%. Growth in aid furnished from Agency funds was a modest 9%, whereas the volume of the assistance provided from in-kind contributions remained at the high level attained in 1978.
3. While the expenditures in 1979 on equipment grew by about 24% over 1978, the sharpest increase occurred in the fellowship component of the programme, which rose almost 33%. A substantial share of the expenditures for the training provided in 1979 was in respect of training courses and study tours.
4. The developments in the expert sector of the programme are a cause of concern for two reasons:
 - (a) The total man-months delivered in 1979 declined by 104 man-months, from 918 to 814. At the end of 1979 there were still 931 man-months to be provided under the Agency's regular programme alone. In paragraph 19 the major fields in which the backlog occurs are mentioned, and the Agency repeats its urgent appeal to Member States to assist in locating and making available the required expertise.
 - (b) Although the number of man-months provided in 1979 declined, the cost of the expertise delivered increased slightly, by 2.5%. This indicates that the pro forma cost figure of \$3800 per man-month established in 1979 and used for budget purposes in the 1980 programme is far too low; it will therefore have to be increased significantly during 1980, which will have a financial impact on the overall status of resources and commitments.
5. Although earmarkings under the regular programme rose by \$784 000, the rate of increase was lower in 1979 (16%, as compared with 20% in 1978). Of this still outstanding assistance only 25% was in respect of approvals dating back more than two years, which indicates a decrease in "old" projects for the first time in four years.
6. The new measures introduced in 1979 to redress the imbalance between the types of currency available among the Agency's resources for technical assistance and the types of currency needed to implement the regular programme are proving to be successful. The co-operation of major donors of non-convertible currencies in establishing special payment arrangements and in facilitating the early identification of utilization possibilities, together with the understanding of recipient countries for the stringent measures that have to be applied in programming convertible funds, have resulted in a quite spectacular reversal of the trend towards a growing imbalance. Whereas in 1978 the deficit in convertible currency and the surplus in non-convertible currency had *increased* by 54% and 60%, respectively, they *decreased* by 40% and 31%, respectively, in 1979. Paragraphs 23 and 24 explain why, notwithstanding this very encouraging development, continuous caution and prudent programming are imperative.
7. During 1979 the first step was taken in the development of a more systematic approach to the evaluation of the Agency's technical assistance activities (paragraph 29). Simultaneously a survey was carried out to ascertain the operational status of the equipment provided during the last five years (paragraph 31).
8. An important new source for the financing of technical assistance activities in the Agency's field of competence may become available through the newly created "Interim Fund for Science and Technology for Development". Close contact with the Interim Fund, which operates under the aegis of the Administrator of UNDP, has been established.

9. The inclusion of write-ups on Agency-assisted projects under the heading "Selected areas of technical co-operation"² has been discontinued, because it is felt that other Agency publications provide more appropriate fora for this kind of material.

10. Several other changes have been introduced which it is hoped will improve the structure of the report. The text in Part III has been shortened, and Tables 1–8, included as Annex I in prior reports, have now been incorporated into the body of the report as Part IV. The numbering of the other annexes has been changed accordingly.

11. Information previously presented in Sections A and C in Annex II has been consolidated in Section A in Annex I, which should provide an easier-to-read summary of the assistance provided by donor countries from their in-kind and special cash contributions over and above those made towards the target.

12. Annexes VII and VIII are new additions. Annex VII lists the footnote-a/ projects upgraded to operational status during 1979 and Annex VIII outlines the project changes made during the year.

² See, for example, Part IV in document GC(XXIII)/INF/185.

Part II. DEVELOPMENT OF THE AGENCY'S TECHNICAL ASSISTANCE ACTIVITIES

A. THE AGENCY'S REGULAR PROGRAMME

1. Programme implementation in 1979

13. As can be seen in Figure 1A and Table 1, 1979 was another year of record growth in the resources available to finance the Agency's regular programme. Voluntary contributions and miscellaneous income for the programme rose by \$1 678 000 or 23.6%, as compared to 1978, and constituted in 1979 just over half of the total technical assistance resources available to the Agency from all sources. In this connection it may be noted that a total of 305 requests, estimated at about \$16 million by the requesting Member States, were received for the 1979 regular programme. The draft programme presented to the Board, after scrutiny of all requests and consultations with individual Member States, consisted of 148 projects to a value of \$5.75 million for which financing was available and 61 projects to a value of \$2.57 million for which financing was not available (footnote a/ projects). Twenty-seven of these footnote a/ projects, to a value of \$863 500, were made operational during 1979 (see Annex VII).

14. The volume of regular programme assistance actually provided rose by \$596 400 or 9%. This is a smaller percentage than registered last year, and since it is not in step with the rate of increase in resources the short-term trend may, at first glance, give cause for concern. However, the greater volume of equipment orders and other financial commitments which were entered into during the year is reflected in the significant increase in unliquidated obligations. This volume of "assistance on the way" rose by 52%. Even if the obligations incurred in 1979 for future-year components of multi-year projects are deducted, the increase is still 21%.

15. Following from the above, the annual rate of increase in earmarkings (uncommitted funds for approved assistance), which had reached 20% in 1978, dropped to 16% in 1979. The backlog of assistance still to be implemented thus increased less steeply than last year, from \$4 801 000 to \$5 585 000.

16. While the percentage of assistance furnished in the current year for projects approved for the same year declined (30% in 1979 as against 36% in 1978, 30% in 1977 and 27% in 1976), the backlog in the implementation of projects approved more than two years previously has started to decrease. Of the \$5 585 000 in earmarkings for assistance still to be implemented at the end of 1979, nearly 50% was in respect of assistance approved for the current year and 25% was in respect of assistance approved for 1978. The remaining 25% was therefore in respect of assistance approved more than two years ago. The backlog in the implementation of assistance approved more than two years previously had been steadily rising, making up 18% of the total in 1976, 26% in 1977 and 30% in 1978. As concerted efforts were made to reverse this trend, it is hoped that the lower 1979 figure indeed indicates that the turning point has been reached.

17. Of the total funds earmarked for assistance still to be delivered, 63% was in respect of expert services. Although this percentage is lower than in 1978, it would be incorrect to assume that it has become easier to recruit the expertise required. What is reflected in this decreased share is the cancellation of unused expert provisions from prior years and the occasional conversion of part or all of such provisions into equipment to meet the changed or more urgent needs of Member States.

18. The total number of expert man-months provided in 1979 from *all* sources, including UNDP, declined from 918 in 1978 to 814 in 1979. This occurred primarily in the regular programme, where the decrease was from 548 to 454 man-months. The demand for expertise from the Agency has also been declining in recent years. This trend has been observed in all technical assistance sectors in the United Nations system. This may be a positive phenomenon as it undoubtedly reflects the increasing availability of national expertise in the developing countries.

19. At the same time, it is not unlikely that in the Agency's case the delays which have been, and are being, experienced in obtaining the required expertise are inducing governments to restrict their requests for expert services to those needed for meeting urgent needs. This being so, delays in making such expertise available are particularly unfortunate. It should be noted in this respect that of the 931 man-months of expertise still to be provided by the end of 1979, 171 man-months in the field of nuclear safety and 166 man-months in the field of nuclear engineering and technology were required; thus, 36% of all the expertise still to be delivered is in these two fields alone. A further 25% is represented by two additional fields: 122 man-months in agriculture and 116 man-months for work in prospecting for and processing nuclear materials. Member States are therefore once again urgently requested to assist in making adequate numbers of qualified experts available, particularly in the above-mentioned fields.

20. Consistent with the overall picture, the most noticeable growth in the regular programme took place in the training component – more specifically in the amounts spent on training courses and study tours. The share of the assistance provided under the regular programme in the form of such training rose from 13.5% in 1978 to 22.7% in 1979. The Agency's training activities represented nearly 36% of all technical assistance furnished under its regular programme in 1979.

2. The status and composition of cash resources

21. It will be recalled that in paragraphs 18--22 in last year's report³ as well as on various other occasions the Agency expressed its grave concern about the growing imbalance between the types of currency available and the types of currency needed to meet its technical assistance commitments. Various new measures were taken to prevent a worsening of the currency-liquidity situation. It is satisfying therefore to report that the new system of currency-related programming and the stringency applied simultaneously in the programming of convertible currency have not only prevented further growth in the imbalance, but have led to significant improvement in the situation. This can be seen in the following table.

Comparison of available cash resources and programme commitments
as at 31 December 1978 and 1979
(in thousands of dollars)

	Total resources		Convertible currencies		Non-convertible currencies ^a	
	1978	1979	1978	1979	1978	1979
Available cash resources	8316	9997	4896	6418	3420	3579
Less: <u>Programme commitments^b</u>						
unliquidated obligations	3470	4204	2630	2849	840	1355
earmarkings	4801	5585	4348	4823	453	762
Sub-total	<u>8271</u>	<u>9789</u>	<u>6978</u>	<u>7672</u>	<u>1293</u>	<u>2117</u>
<u>Surplus:</u>						
can be funded, or	45	208	–	–	2127	1462
<u>Deficit:</u>						
cannot be funded	–	–	(2082)	(1254)	–	–

^a In this report the term "non-convertible currencies" refers to the accumulating currencies of Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania and the USSR.

^b Does not include unliquidated obligations and earmarkings for future-year components of multi-year projects.

22. As indicated above, the deficit in convertible currencies decreased by \$828 000, or 40%, accompanied by a reduction in the surplus of non-convertible currencies of \$665 000, or 31%. It should be recalled that in 1978 the deficit and surplus had increased by about 54% and 60%, respectively. In view of the willingness of the major donors of non-convertible currencies to allow payment for large items of equipment to be spread over a number of years and the understanding shown by recipient countries for the constraints that have to be exercised in programming convertible currency resources, there is reason to believe that the favourable development started in 1979 can be sustained.

23. Despite the considerable success attained so far, it must be recognized that the imbalance still exists. If all approved projects in the programme on 31 December 1979 were to be implemented fully now, there still would be a cash deficit of \$1 254 000 in convertible currencies and a surplus of \$1 462 000 in non-convertible currencies. This imbalance is of the order of magnitude of the problem that existed at the end of 1977, when the need to take measures became evident. It is therefore imperative that the measures applied to overcome this problem should be continued.

³ GC(XXIII)INF/185

24. Continuous vigilance and caution are also called for due to the fact that the pro forma cost of \$3800 per expert man-month introduced in mid-1979 and used in estimating the cost of expert services under the 1980 programme will have to be increased significantly during 1980. The recalculation of all expert man-months to be delivered under the 1980 programme and still to be delivered from prior years at a higher cost would immediately absorb the present surplus of \$208 000, producing a temporary deficit. At the same time, this increase will exert considerable pressure on the convertible currency portion of the programme

3. Other developments

25. The Agency's project for Asia and the Pacific on the Industrial Application of Isotopes and Radiation Technology, approved in the 1978 programme, is leading to promising follow-up. During 1979 UNDP approved funds for a "preparatory assistance mission" to develop a project proposal based on the final report of the 1978 Agency project. This proposal identified activities involving \$5 million over a period of five years. In view of the size and complexity of the project UNDP has indicated its preparedness to finance one year of preparatory assistance starting in 1980, totalling \$386 000, to initiate training activities and to finalize the project document and work plan. Approval of the major project will be considered by UNDP upon completion of the preparatory assistance, provided that full participation of the countries involved is ensured.

26. The value and success of technical assistance activities can only be judged by the impact such activities have made in the countries where they were carried out. The degree of effectiveness of external inputs can often be ascertained from the final reports produced by project experts, but to measure success in terms of impact achieved requires thorough post-project evaluation. Such evaluation should not only be made immediately upon conclusion of a project, but also after a time interval of one or more years. The results of evaluation efforts are not only of interest as assessments of past activities but should lead to improvement in conception and design of future projects if the experience gained is properly recycled.

27. The subject of evaluation is receiving increased emphasis in the United Nations system as manifested in the programme evaluation studies made by the Joint Inspection Unit in selected countries and its review, which is currently taking place, of the status of evaluation in the system as a whole. The Agency's External Auditor has also emphasized the value of evaluation, while recognizing the additional administrative cost systematic evaluation would entail.

28. In the Agency, post-project evaluation has always taken place on an informal but continuing basis. Staff members of the Division of Technical Assistance as well as technical officers visiting recipient countries ascertain what is happening in their fields in the country and are in general aware of what has become of activities supported by the Agency in the past. This experience is fully brought to bear in the appraisal of new requests. Contacts established with local authorities, scientists and technicians through training courses and fellowship programmes as well as through past project activities and visits to the countries facilitate this feedback.

29. Nevertheless, there certainly is room for more formal, systematic evaluation efforts and the Agency has taken some steps in this direction. In 1979 a staff member in the Department of Technical Assistance and Publications was assigned full time to deal with evaluation matters. The methods used for systematic post-project evaluation by other United Nations agencies are being studied, and the intention is, whenever possible, to make the evaluation of past activities an integral part of each working visit by staff members to countries assisted by the Agency.

30. Experience gained during 1980 will determine the emphasis to be given in this area in future years. In-depth evaluations with full participation of the Government(s) involved may in the future be undertaken, either of activities in a specific field in a number of countries or of all Agency-assisted activities in one or more countries.

31. During 1979 a survey was carried out of the equipment supplied by the Agency during the last five years. A questionnaire was sent to all 63 Member States which received equipment during this period, requesting information on Agency-provided instruments that were not functioning. Answers were received from 20 countries concerning 83 instruments; 23 of these had been supplied more than five years ago and 24 were non-nuclear instruments.

32. The total value of equipment provided by the Agency during this period amounted to \$27.5 million. The value of the instruments reported as no longer operational is \$550 000. The total value of the equipment supplied to the countries which reported these non-operating instruments amounted to \$7.2 million during the period under review, so that apparently less than 8% of the equipment provided to these countries was currently out of order. It may be

assumed that not all existing defects were reported, but, on the other hand, several of the reported failures did not pose real problems since local maintenance personnel were able to take care of them. It is therefore reasonable to assume that at most 15% of the equipment supplied posed more or less severe maintenance problems, which would be in line with the findings of earlier surveys on nuclear medicine instruments carried out in South East Asia and in Latin America. The problem is, therefore, one of manageable proportions.

33. In this connection it should be noted that equipment maintenance has received and continues to receive quite a lot of attention. For more than ten years the Agency has organized yearly training courses in nuclear instrumentation and maintenance; in 1980 a second course on nuclear medicine instrumentation will be held and several regional instrumentation maintenance and repair courses are being planned. National training courses on instrument maintenance are also being planned. Several experts on electronics and instrumentation are furnished under the technical assistance programme each year. An RCA project on nuclear instrument maintenance is being carried out in South East Asia; it will be closely co-ordinated with the UNDP-assisted RCA regional industrial applications demonstration project. At the same time, a pilot spare-parts project is being established to assist certain laboratories in developing countries that are participating in other Agency maintenance activities in setting up their own spare-parts facilities. This project is being assisted from funds made available by the United States Department of Energy to the Medical Applications Section in the Agency's Department of Research and Isotopes. Much equipment supplied under the Agency's technical assistance programme is now being accompanied by sets of spare parts.

34. As announced in last year's report⁴, work on the development of a new, more adequate, computerized project status reporting system has been initiated. During 1979 the analysis of workflows and the design of the new computer programs for the first phase, covering regular programme projects, was completed. This first phase will be introduced during 1980. During the initial stages the old system will also have to be maintained, which will inevitably add to the workload of the staff concerned. It is envisaged that by the end of 1980 the use of the old system for regular programme projects can be discontinued.

B. ASSISTANCE PROVIDED FROM EXTRABUDGETARY FUNDS AND THROUGH ASSISTANCE IN KIND

1. Extrabudgetary funds

35. Technical assistance provided from extrabudgetary funds -- including expenditures against funds made available in previous years -- rose by nearly 55%, from \$1 539 200 in 1978 to \$2 379 700 in 1979. The resources made available in this category by various Member States amounted to \$2 181 000, which represents a decline of about 23%. This decline, rather than indicating lessening of interest on the part of donors, is mainly due to the fact that a very substantial payment was received in 1978 for SIDA-financed assistance in India and Bangladesh; most of the funds were used only in 1979.

36. Extrabudgetary funds for the 1979 programme were made available by the following donors:

USA	\$1 074 500	Belgium	\$84 100
Sweden	613 900	Argentina	20 000
Germany, F.R.	282 500	Australia	16 500
Canada	85 500	IANEC	4 300

37. The extrabudgetary funds covered 21% of the non-UNDP financed assistance provided by the Agency in 1979. These funds are therefore an indispensable source of support for maintaining the total programme at its present level. It is hoped that, apart from the traditional donor countries, other developed Member States will join in contributing additional resources for the implementation of footnote a/projects as well as new large-scale projects.

⁴ Ibid., paras 25-28.

38. It is particularly gratifying to note from the above table that one developing country and an intergovernmental organization of mainly developing countries have made funds available for the execution of projects in other developing countries. These practical examples of TCDC (technical co-operation between developing countries) deserve special attention. It is hoped that they will stimulate other States in need of technical assistance to consider the possibility of joining in TCDC ventures. Many of the footnote a/projects in the Agency's annual programme of technical assistance are modest in size and would lend themselves to implementation by other developing countries in the spirit of TCDC.

2. Assistance in kind

39. Resources made available to the Agency in this category for 1979 showed an increase of 17%, rising by \$358 000 to \$2 462 000. Expenditures against these resources remained almost stationary after the sharp increase in the previous year, amounting to \$2 014 800.

40. Over 95% of all assistance provided from this source in 1979 was in support of the Agency's training activities. The trend towards a situation where in-kind contributions are made in the form of fellowships and cost-free lecturers at training courses is a welcome one for two reasons. Firstly, when making a training effort of this size possible, Member States directly and effectively contribute to the transfer of technology. This could eventually lead to a redressing of the imbalance in the distribution of sources of knowledge between north and south in the Agency's field of competence; in turn this would make TCDC easier to accomplish and more widespread. Secondly, there are considerable advantages from an administrative point of view when additional expertise and equipment for other than training purposes are provided from extrabudgetary contributions rather than under in-kind arrangements.

C. ASSISTANCE PROVIDED FROM UNDP FUNDS

1. Programme implementation

41. The sharp increase in UNDP expenditures which took place in 1978 was sustained in 1979. The technical assistance delivered from UNDP funds in 1979 rose again by more than 37% over the previous year, reaching a total of \$4 059 600, which is nearly double the 1977 amount. During the year 45 projects were under implementation with a total budget of \$24.3 million, of which \$8.4 million had already been implemented prior to 1979. Fifteen new projects with a total budget value of \$5.6 million were approved and 11 projects were completed during the year.

42. In the UNDP system, project approvals are not linked to an annual cycle. Since a project may be approved at any time during the year and project budgets are rephased whenever necessary, implementation rates can only be calculated on a project-by-project basis. Annual implementation rates comparable to those applicable to the Agency's regular programme would therefore be difficult to establish. Through mandatory year-end budget revisions any unimplemented provisions become part of the following year's project budget whenever it is anticipated that such provisions will still be needed. Although, for the above reasons, implementation delays are less discernible for UNDP-assisted projects, these are by no means immune to the factors that cause such delays in other technical assistance programmes. Nevertheless, expenditures in 1979 were considerably higher than anticipated at the beginning of the year. The number of newly approved projects, and also preparatory activities for others, may ensure that the volume of UNDP-financed assistance will not decline next year, but it would be difficult to anticipate a substantial increase over the total attained in 1979.

43. In last year's report it was noted that the concentration of UNDP large-scale projects in Latin America caused a particularly heavy workload in the Latin America Section of the Division of Technical Assistance. A similar heavy concentration of large-scale projects also occurs in the field of uranium exploration, and it is exerting heavy pressure on the staff involved in the Division of Nuclear Power and Reactors. A solution is being sought, since it is incumbent upon the Agency to provide adequate technical and administrative support for UNDP projects. To help defray the cost of such support, UNDP contributed \$949 400 for 1979.

2. Other developments

44. The programming missions fielded by the Agency result in reports and recommendations which in themselves are a form of assistance to the countries visited since they provide an input to Governments' planning in the sectors to which the recommendations refer. UNDP has, therefore, contributed \$10 000 towards meeting the cost of such missions in 1979 as "sectoral support" and is prepared to continue to be associated with future missions in this manner.

45. In meetings with officials from UNDP Headquarters as well as with UNDP Resident Representatives the Agency has called attention to the role it could play in various projects where the main objectives and activities are not within the immediate purview of the Agency. Projects are often conceived and developed at the country level in fields such as plant breeding, hydrology, medicine and industry without local awareness that the introduction of nuclear techniques in certain project activities could directly contribute to the attainment of the planned objectives. Although draft country programmes are circulated to the Agency, the project descriptions provided are not always sufficient to identify such possibilities. Increased attention will therefore be given to sensitizing UNDP in this respect, so that project proposals may be studied at an early stage to identify any supportive role the Agency could play.

46. An important new development has taken place as a result of the United Nations Conference on Science and Technology for Development, held in Vienna in August 1979. The Conference called for the establishment of a special "Interim Fund" to finance science and technology for development, with a target of \$250 million for the two-year period 1980-81 to be administered on a identifiable and separate basis by UNDP under the guidance of an inter-governmental committee. Consultations between UNDP and its executing agencies began during the last quarter of 1979 on the manner in which the Interim Fund would operate.

47. In the "Initial Prospectus" drafted by UNDP on the organization of the Fund, as requested by the Conference, agencies as such would have been eligible to obtain direct financing from the Fund for global research projects and the implementation of intercountry projects. The modifications subsequently adopted by the Second Committee of the General Assembly have made this uncertain. The question of the eligibility of agencies to obtain assistance from the Fund will be considered for inclusion in the agenda of the first meeting of the Intergovernmental Committee which will take place in 1980. Regardless of the outcome of deliberations on this issue, it is clear that many of the Agency's technical assistance activities are fully in line with the purpose for which the Fund was established. The Interim Fund will support a broad range of activities including the promotion of global and interregional projects in science and technology for development. The Fund will finance training to generate and implement science and technology development policies, programmes and projects. It will promote basic and applied research; the application and pilot testing and the diffusion of innovative technology; the undertaking of a limited number of high-risk, high-potential research and development projects; and the undertaking of international co-operation projects in the promotion and application of science and technology in developing countries.

48. In the past, some science- and technology-oriented project proposals in the Agency's fields of competence did not receive sufficient priority to compete with project proposals in other sectors for scarce UNDP resources. There is little doubt therefore that the Fund can become an important additional source of financing for the Agency's type of technical assistance projects. It should, however, be noted that the result of the pledging conference for the Interim Fund, namely \$35 million, was far below expectations.

49. Close contacts have been established with UNDP on these matters and, once the Fund is operational, the Agency will endeavour to ensure that its potential for technical assistance activities in the nuclear field will be fully realized. Several project proposals likely to be of interest to the Fund are already being developed.

Part III. ANALYSIS OF THE ASSISTANCE PROVIDED

50. Although the information contained in Figures 1A through 6 is largely self-explanatory, some comments on each figure are given below.

Figure 1A, Available resources

51. "Agency funds" represent income to Operating Fund II and consist of voluntary contributions by Member States (\$8 059 000) and miscellaneous income (\$740 000). "Extrabudgetary funds" are given in total here; the breakdown by donor is given in paragraph 36. "Assistance in kind" constitutes the cumulative value of cost-free and partly cost-free expert services, some equipment grants, contributions for training courses, Type II fellowship stipends and funds for scientific visits. It should be noted that all monetary values appearing under the heading "in kind" are based on estimates.

52. "UNDP funds" reflect the amount actually spent in carrying out UNDP-assisted projects. As new UNDP projects may be approved at any time during the year and frequent changes and rephasings of project budgets occur, there would be little sense in estimating the resources theoretically available from UNDP for a given year. However, the funds actually spent plus the unliquidated obligations of \$2 948 600 (shown in Part IV, Table 4), totalling \$7 008 200, give a clearer picture of the total UNDP resources that were at the Agency's disposal in 1979.

53. Not included in the resources shown in Figure 1A are the "Funds in trust" made available to the Agency by countries to meet the cost of the provision of assistance for themselves. Such arrangements existed with five developing countries in 1979, involving expenditures totalling \$393 500 (see Annex I.B).

54. A significant additional resource not reflected in the statistical data is the value represented by the lecturers and facilities made available by the Governments which hosted regional and interregional training projects (see Annex II). Although the value of the assistance rendered by Governments in preparing and hosting these courses is difficult to quantify, it is clear that without this support the training course programme could not have been carried out successfully. Special recognition is due in this respect to the Governments of France, the Federal Republic of Germany, Spain and the United States of America for the support provided in connection with the training courses conducted in 1979 on nuclear power project topics.

Figure 1B, Utilization of resources

55. This figure refers to the distribution of assistance actually provided in 1979. It includes the provision of assistance approved in prior years but does not include unliquidated obligations. It can be seen that the five major fields (shaded lines) in which the Agency provided technical assistance absorbed 75% of all such aid in 1979. Figure 1B also shows the distribution among the three basic components through which technical assistance is provided: experts, equipment and fellowships. The decreasing share of the total assistance furnished in the form of expert services is clearly apparent.

Figures 2A and 2B, Distribution of expert services

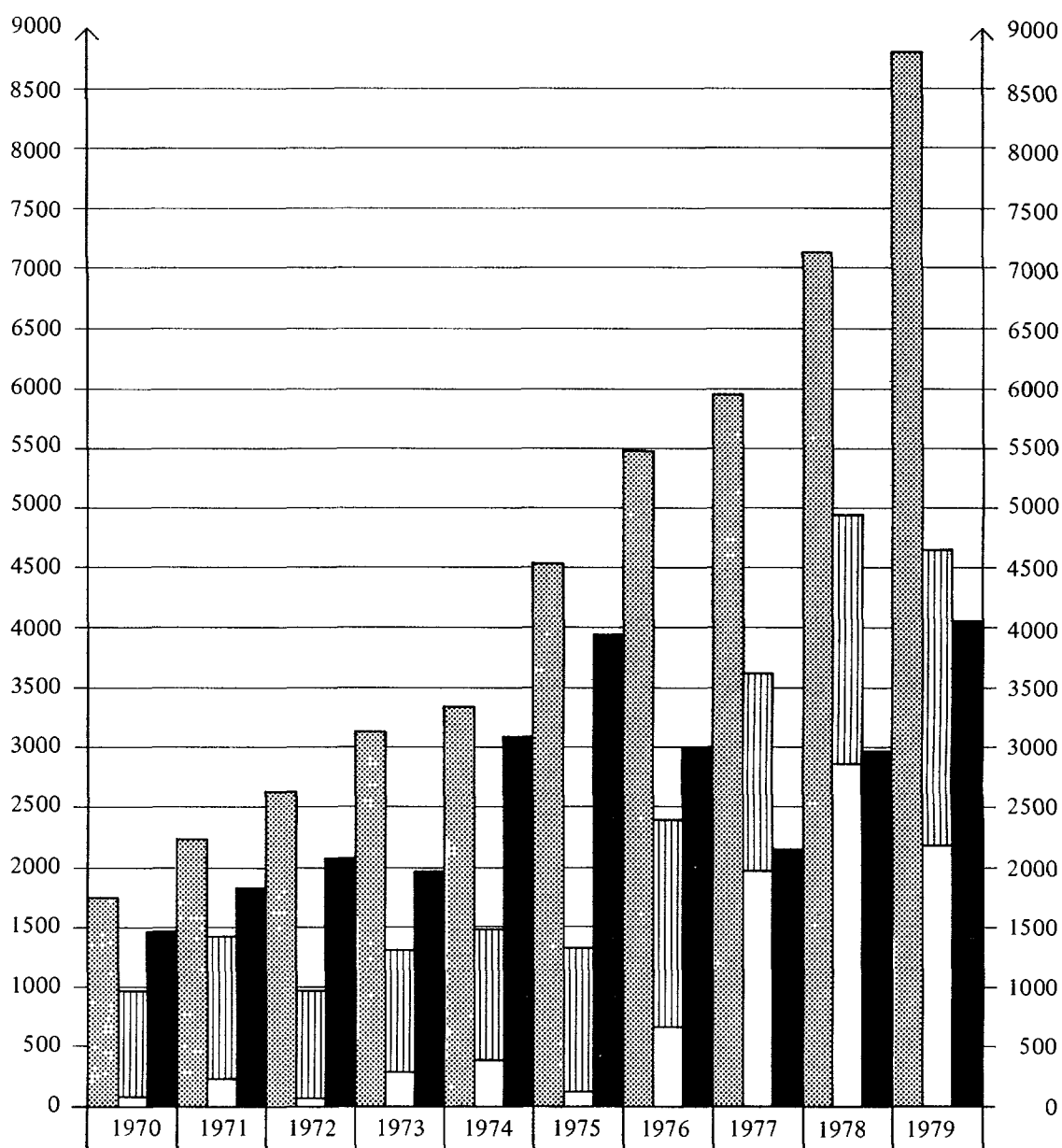
56. The data also include Agency staff members and representatives of other international organizations who served as lecturers and experts in 1979 and who are shown by nationality in Figure 2B.

57. It should be noted that, although there was little change in the number of assignments (537 in 1978 and 535 in 1979) and in the number of experts (441 in 1978 and 442 in 1979), the total man-months served declined by 104, or 11%; thus, the average length of assignment is clearly decreasing.

Figures 3A and 3B, Distribution of equipment

58. In previous reports it was attempted in Figure 3B to match data on equipment expenditures with data on orders placed in individual countries of procurement. Since, in the Agency's system, data on countries of procurement are linked to obligations incurred and not to actual payments, pro-ratings based on incurred obligations were applied in the past to expenditures to arrive at the "procured in" country totals. In some cases this has had a distorting effect on the amounts shown for individual countries of procurement. Table 3B now shows the equipment *ordered* in 1979 in individual countries. The "provided to" data, as in earlier reports, reflect the exact total of equipment expenditures for recipient countries.

FIGURE 1A
RESOURCES AVAILABLE FOR
AGENCY TECHNICAL ASSISTANCE PROGRAMMES: 1970-1979
(in thousands of dollars)



Agency funds	1749	2225	2637	3125	3348	4539	5492	5962	7121	8799
Extrabudgetary funds	61	218	60	267	367	110	648	1966	2849	2181
Assistance in kind	894	1197	900	1032	1114	1212	1737	1648	2104	2462
UNDP funds	1469	1839	2072	1964	3082	3942	3002	2144	2954	4060
TOTAL	4173	5479	5668	6388	7911	9803	10879	11720	15028	17502





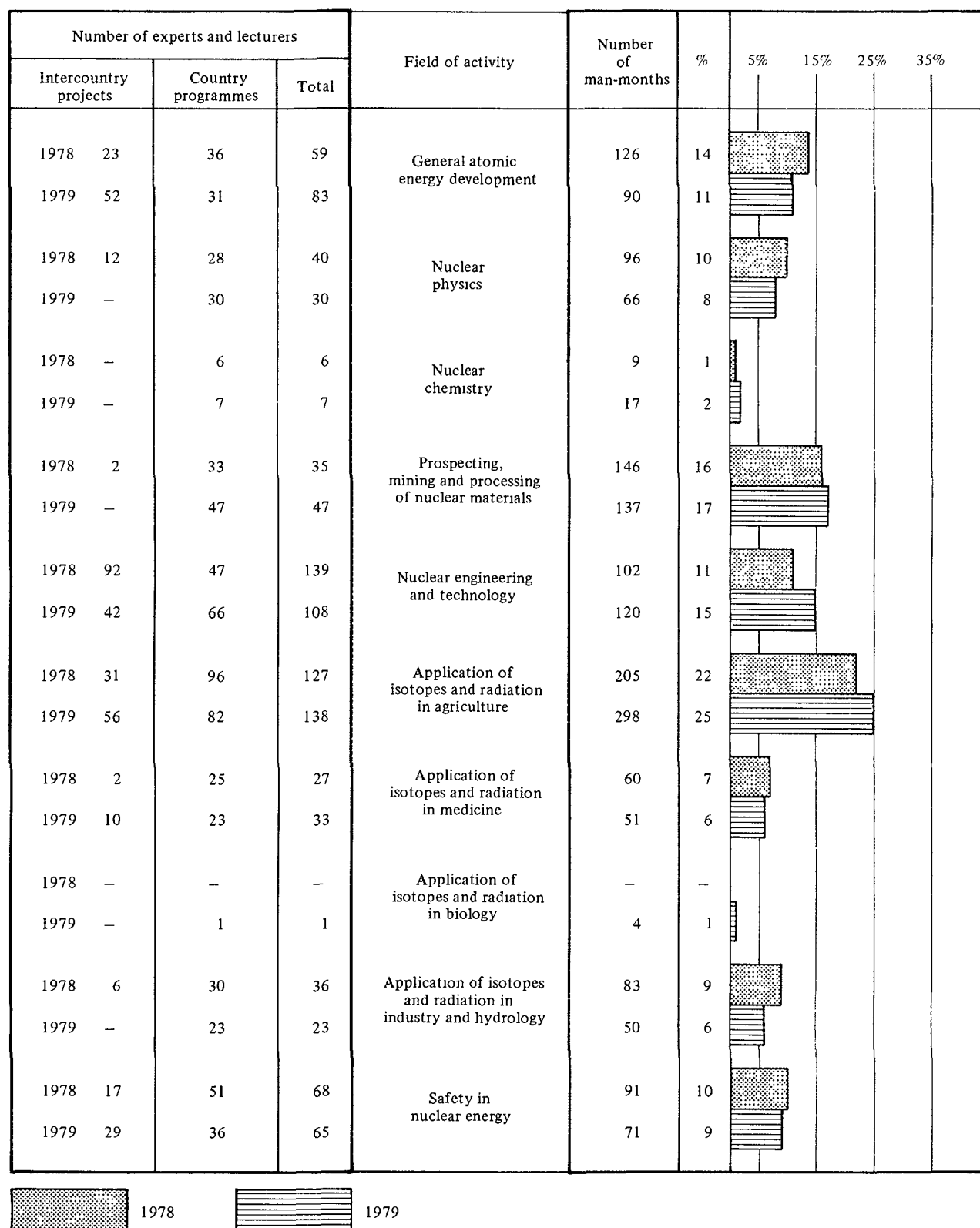
 Agency funds
 Extrabudgetary funds
 Assistance in kind
 UNDP funds

FIGURE 1B
UTILIZATION OF RESOURCES: 1978, 1979 and 1970-1979
(in thousands of dollars)

FIELD OF ACTIVITY	Year	Experts	Equipment	Fellowships	Share of total programme		
		\$	\$	\$	\$	%	
General atomic energy development	1978	474.5	766.3	242.6	1 483.4	11.4	
	1979	473.9	1 298.8	363.7	2 136.4	13.7	
Nuclear physics	1978	337.1	649.5	461.5	1 448.1	11.1	
	1979	265.3	700.5	358.8	1 324.6	8.5	
Nuclear chemistry	1978	39.0	290.5	212.6	542.1	4.2	
	1979	62.5	301.4	292.4	656.3	4.2	
Prospecting, mining and processing of nuclear materials	1978	663.8	539.7	209.4	1 412.9	10.9	
	1979	619.1	933.2	182.7	1 735.0	11.2	
Nuclear engineering and technology	1978	574.2	812.4	976.0	2 362.6	18.2	
	1979	660.3	958.8	1 233.9	2 853.0	18.3	
Application of isotopes and radiation in	Agriculture	1978	827.4	1 066.2	550.2	2 443.8	18.8
		1979	922.6	1 332.1	1 374.1	3 628.8	23.3
	Medicine	1978	231.5	376.0	413.9	1 021.4	7.8
		1979	212.1	453.4	411.0	1 076.5	6.9
	Biology	1978	3.0	10.5	113.6	127.1	1.0
		1979	14.1	198.5	87.9	300.5	1.9
	Industry and Hydrology	1978	389.6	643.5	125.0	1 158.1	8.9
		1979	317.6	341.8	164.5	823.9	5.3
Safety in nuclear energy	1978	344.2	303.6	360.2	1 008.0	7.7	
	1979	414.0	229.8	399.2	1 043.0	6.7	
Total assistance	1978	3 884.3	5 458.2	3 665.0	13 007.5	100.0	
	1979	3 961.5	6 748.3	4 868.2	15 578.0	100.0	
Ten-year total	1970-1979	25 918.4	31 048.5	24 474.4	81 441.3	100.0	

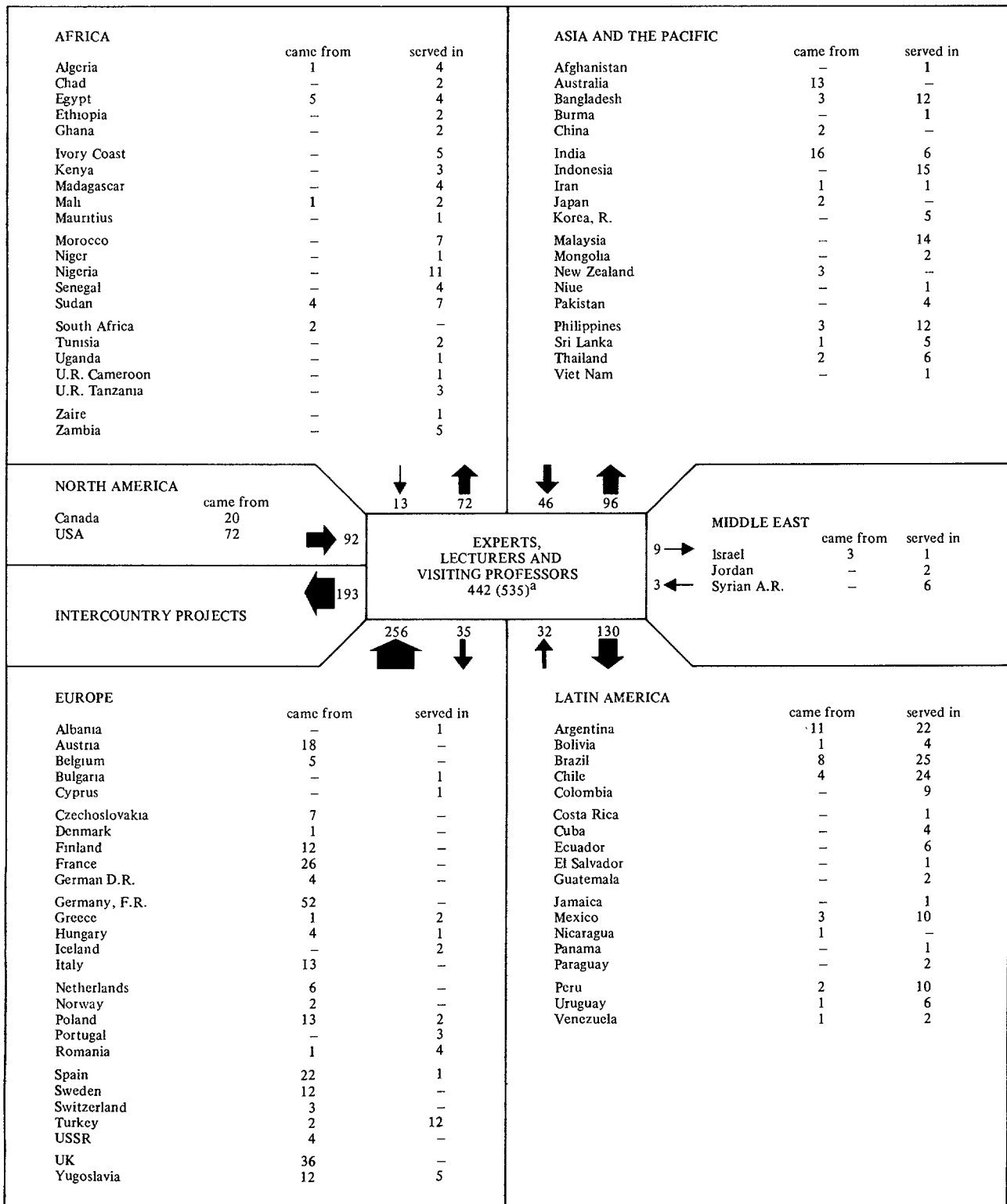
Distribution of assistance by type			
Type	1978	1979	1970-1979
Experts	29.9%	25.5%	31.8%
Equipment	41.9%	43.2%	38.1%
Fellowships	28.2%	31.3%	30.1%
Total	100.0%	100.0%	100.0%

FIGURE 2A
DISTRIBUTION OF EXPERT SERVICES BY FIELD OF ACTIVITY: 1978 and 1979



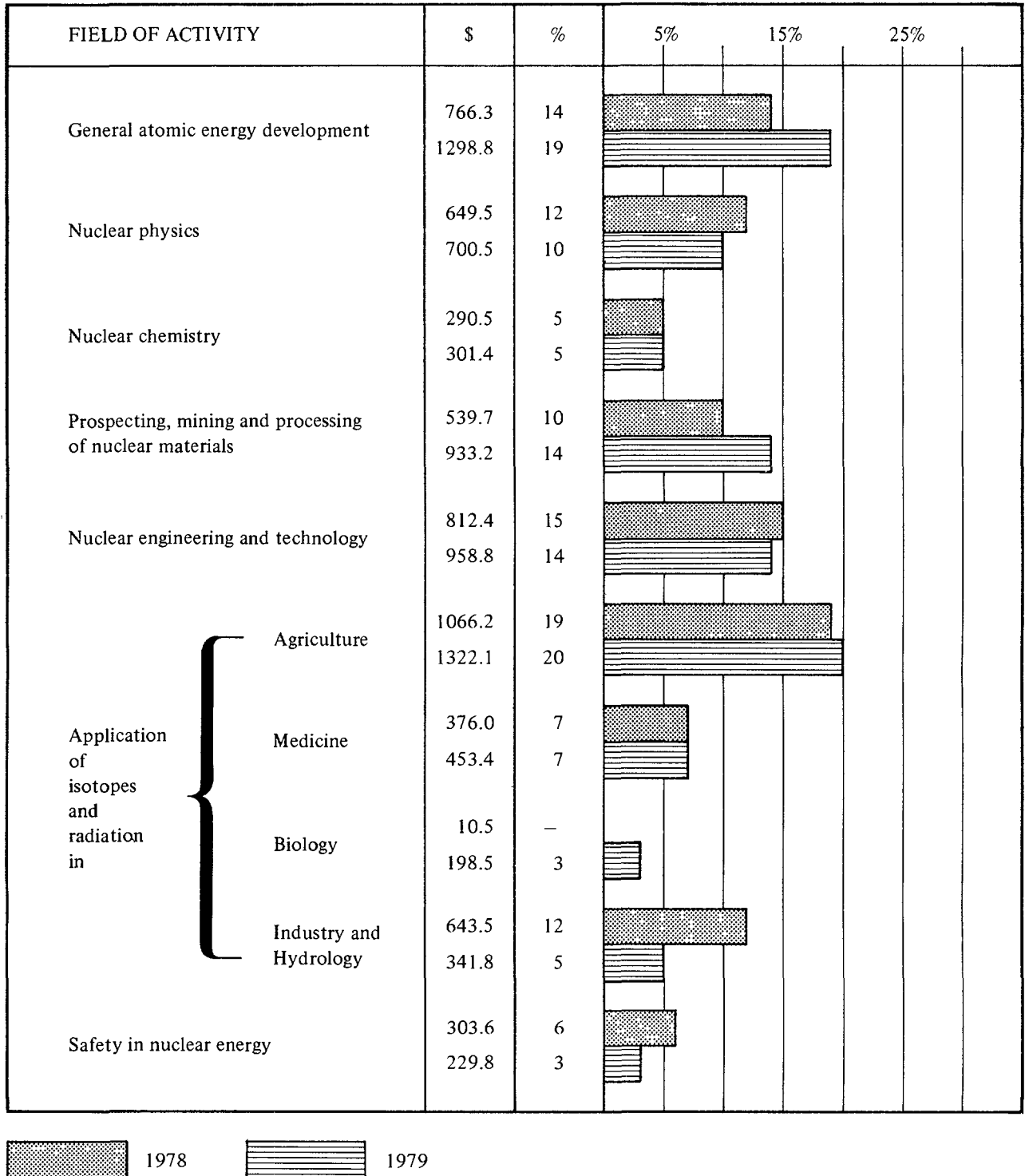
Note: The figures in the columns above, on the right-hand side, indicate the number of man-months and the corresponding percentage share, by field of activity, of the total man-months of expert services provided.

FIGURE 2B
DISTRIBUTION OF EXPERT SERVICES BY REGION: 1979



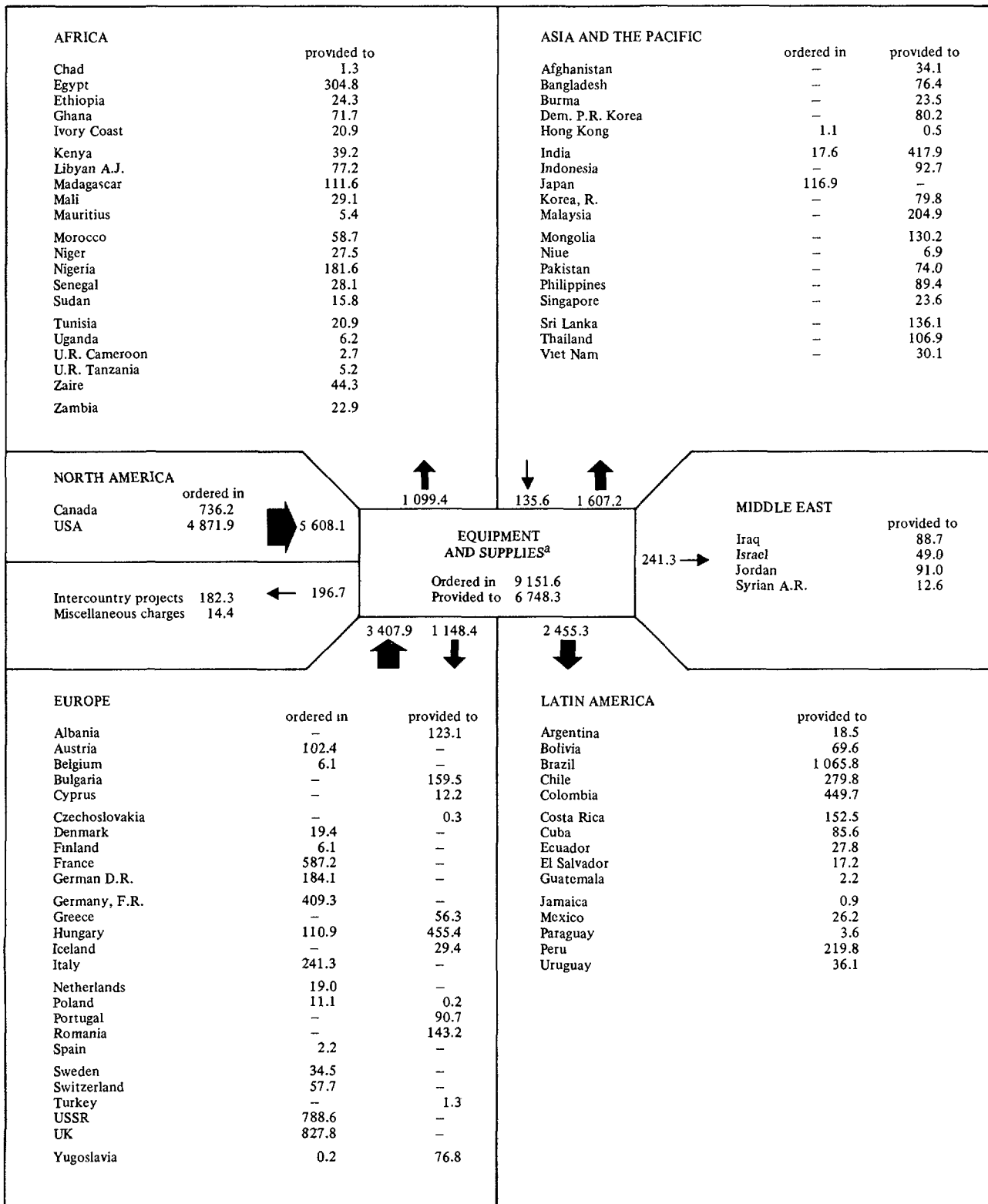
^a The difference between the number of assignments (535) and the actual number of experts (442) is due to the fact that a number of experts served in more than one country.

FIGURE 3A
DISTRIBUTION OF EQUIPMENT BY FIELD OF ACTIVITY: 1978 and 1979
(in thousands of dollars)



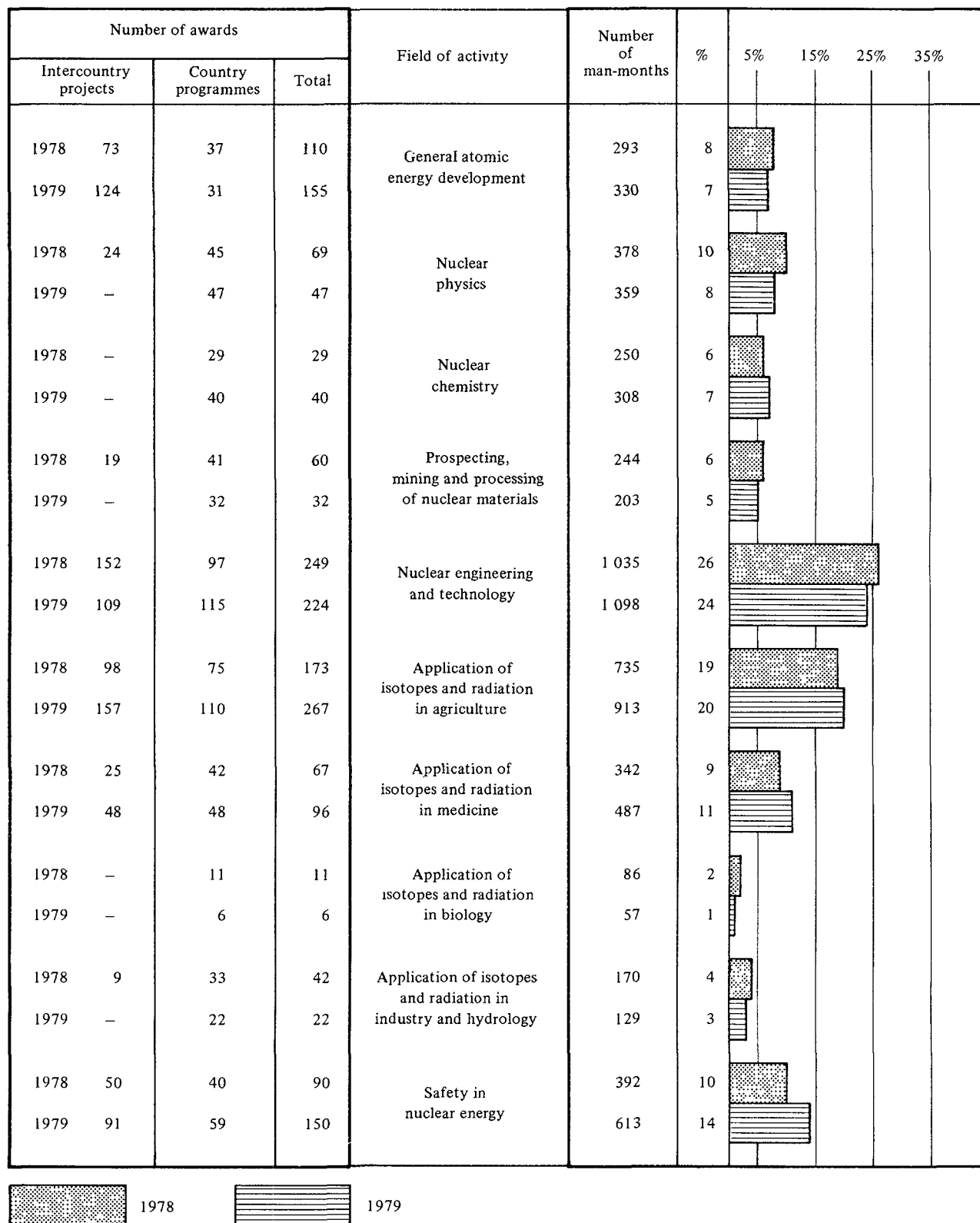
Note: The figures in the second and third columns of the chart indicate the value (in thousands of dollars) of equipment and the corresponding percentage share, by field of activity, of the total equipment provided.

FIGURE 3B
DISTRIBUTION OF EQUIPMENT BY REGION: 1979
(in thousands of dollars)



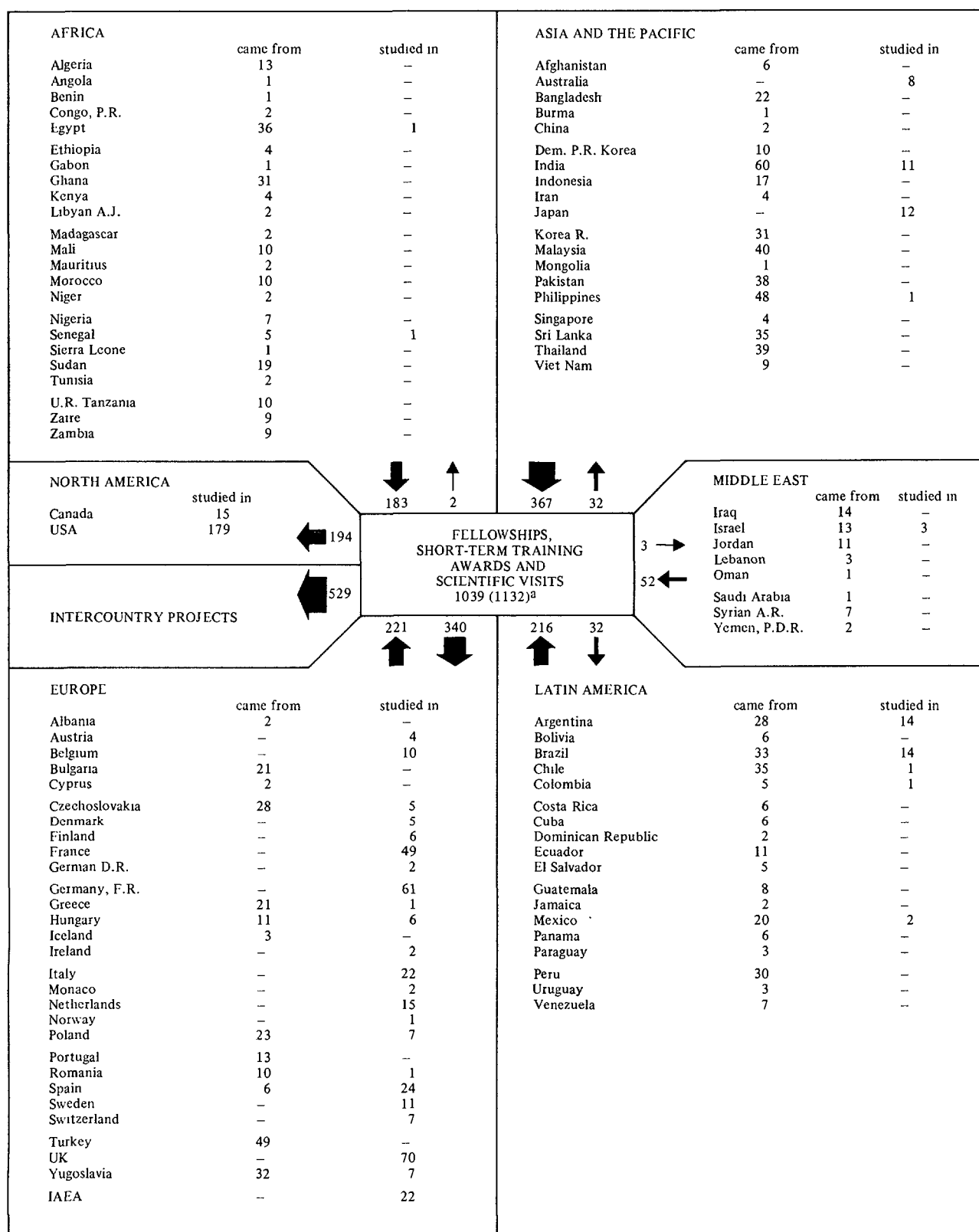
a The difference between the value of the equipment ordered (\$9 151 600) and of the equipment provided (\$6 748 300) is due to the fact that some of the equipment ordered in 1979 had either not been delivered or not been paid for by the end of the year.

FIGURE 4A
DISTRIBUTION OF FELLOWSHIP AWARDS BY FIELD OF ACTIVITY: 1978 and 1979



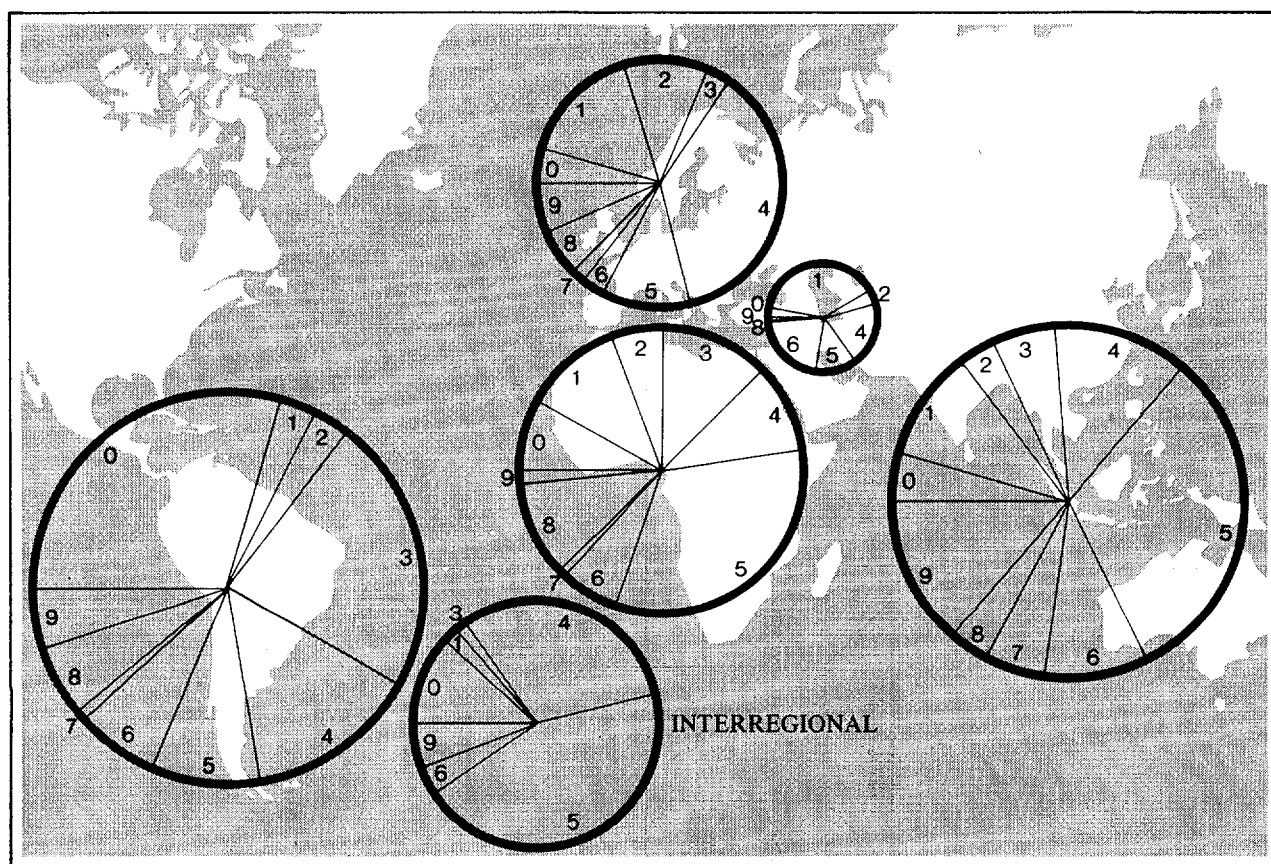
Note: The figures in the columns above, on the right-hand side, indicate the number of man-months and the corresponding percentage share, by field of activity, of the total man-months of fellowships awarded.

FIGURE 4B
DISTRIBUTION OF FELLOWSHIP AWARDS BY REGION: 1979



^a The difference between the number of awards (1039) and the number of places of study (1132) is due to the fact that a number of fellows, study tour participants and holders of awards for scientific visits went to more than one place of study.

FIGURE 5A
DISTRIBUTION OF TECHNICAL ASSISTANCE BY FIELD AND REGION: 1979^a

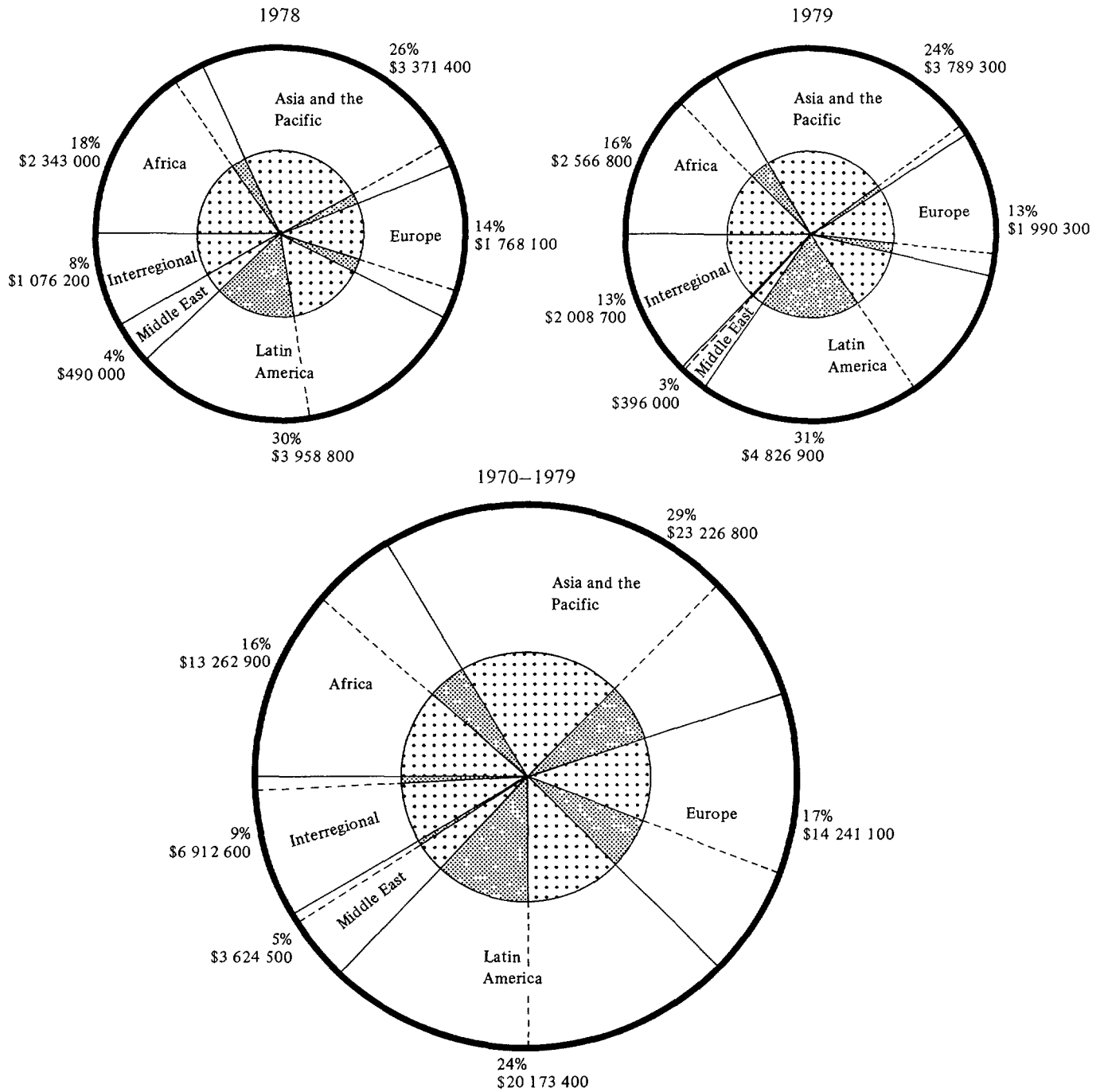


SUMMARY

Field of activity	Africa %	Asia and the Pacific %	Europe %	Latin America %	Middle East %	Inter- regional %	All regions %
0 - General atomic energy development	8	4	5	30	3	12	14
1 - Nuclear physics	11	10	16	3	39	2	9
2 - Nuclear chemistry	6	3	11	3	4	—	4
3 - Prospecting, mining and processing of nuclear materials	12	6	3	22	—	1	11
4 - Nuclear engineering and technology	10	13	36	14	20	31	18
Application of isotopes and radiation in							
5 - Agriculture	33	31	12	9	12	44	23
6 - Medicine	7	9	3	7	21	4	7
7 - Biology	1	6	2	1	—	—	2
8 - Industry and Hydrology	10	4	6	6	—	—	5
9 - Safety in nuclear energy	2	14	6	5	1	6	7
	100%	100%	100%	100%	100%	100%	100%

^a For each region, the relative monetary value of the technical assistance provided by the Agency is denoted by the size of the circle superimposed over the region on the map. The size of the segments in each circle indicates the share of total assistance given in the various fields of activity.

FIGURE 5B
DISTRIBUTION OF TECHNICAL ASSISTANCE BY REGION AND SOURCE
 (1978, 1979 and 1970-1979)



Distribution of technical assistance by source

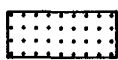

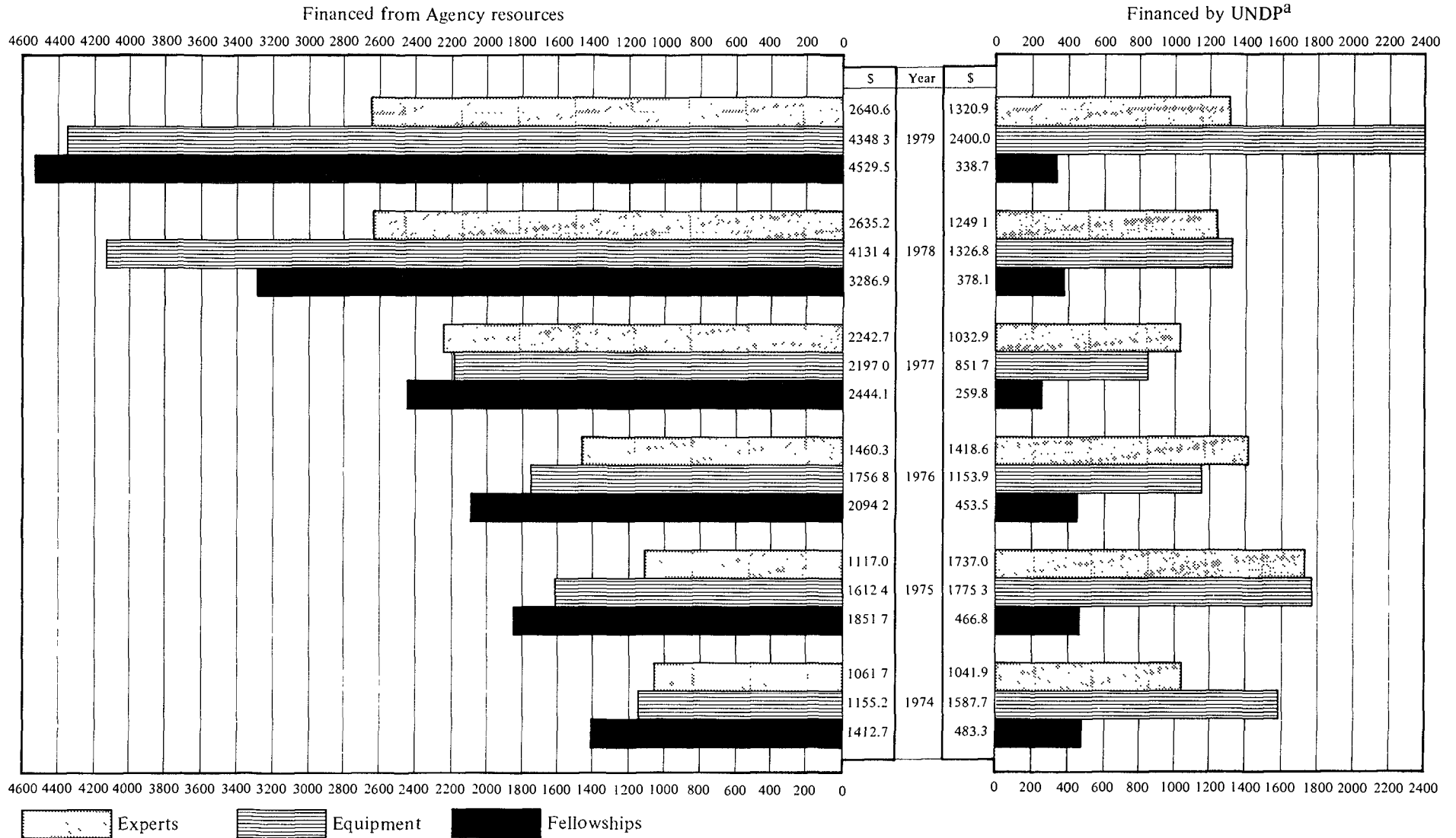
	1978	1979	1970-1979
 Agency resources	77.3%	73.9%	67.2%
 UNDP	22.7%	26.1%	32.8%

FIGURE 6
TRENDS IN THE TECHNICAL CO-OPERATION ACTIVITIES OF THE AGENCY
(in thousands of dollars)



a Includes the value of assistance in kind made available for UNDP-assisted projects 1974–1976.

Figures 4A and 4B, Distribution of fellowship awards

59. These figures also include participants in training courses whose cost of attendance was met by the Agency. The number of candidates who received awards increased from 900 in 1978 to 1039 in 1979, and the number of man-months of training awarded rose from 3925 to 4265.

60. A comparison of the nominations and awards for country programme fellowships in 1978 and 1979 and of all training awards made during these two years is given below. It will be seen that the number of awards rose in respect of all categories of training: the increase was approximately 14% for country programme awards, 10% for scientific visit awards and 18% for participation in training courses and study tours. The most significant change was the increase in Agency country programme awards (up from 314 awards covering 2730 man-months in 1978 to 416 awards and 3531 man-months in 1979). During the same period UNDP-financed awards declined from 87 (totalling 418 man-months) to 40 (covering 175 man-months).

<u>Country programme awards</u>		<u>1978</u>	<u>1979</u>
Nominations received			571
Effective awards: ⁵	Agency	314	416
	UNDP	87	40
Percentage of nominations which led to effective awards		70.2%	72.8%
<u>Intercountry programme awards</u>			
Scientific visits		49	54
Short-term training projects		<u>450</u>	<u>529</u>
Total awards		900	1039

61. The percentage of nominations which led to effective country programme awards in 1979, namely 72.8%, is in line with the ten-year average. In addition, numerous candidates were not selected because they were under- or over-qualified for the training requested, their knowledge of the foreign language in which the training abroad would have been given was not satisfactory, the training requested was not related to the peaceful application of nuclear energy, or their nominations were withdrawn.

Figures 5A and 5B, Distribution by region

62. These figures summarize the regional distribution of the assistance provided in 1979. "Agency resources" in Figure 5B include all expenditures met from Agency funds, extrabudgetary funds and assistance in kind.

Figure 6, Trends in technical co-operation activities

63. The figure shows the comparative expenditures during the past six years for experts, equipment and fellowships financed from UNDP and Agency resources. "Agency resources" include all non-UNDP funds.

⁵ Total number of awards less withdrawals after granting of the award as at 31 December 1978 and 31 December 1979 respectively.

Part IV. STATISTICAL TABLES

A. INTRODUCTORY NOTES

1. Resources

64. Figure 1A and Table 1 show the resources made available for approved field programmes of technical assistance and thus do not include UNDP or SIDA overhead cost allocations. The estimated value of all offers of assistance in kind in support of a given year's technical assistance programme is shown in column (1d) of Table 1. With the introduction of a new "Extrabudgetary funds" column in Table 1, the extrabudgetary funds formerly included in the "In kind" totals have been deducted therefrom, which accounts for the lower totals in the "In kind" column in Table 1 for the years prior to 1977.

65. All monetary values appearing under the heading "In kind" are estimated in accordance with the following guidelines:

- (a) Experts. The value of the services of each cost-free expert is estimated on the basis of the average salary of an equivalent expert engaged by the Agency and the applicable daily subsistence allowance as established by UNDP, plus the cost of a round-trip air ticket; analogous criteria are used in estimating the value of the services of cost-free and partly cost-free lecturers;
- (b) Equipment. The value of equipment is estimated according to the offer made by the donor Government (at the later, "assistance provided" stage, however, the value to the relevant project is based on the actual costs incurred by the donor Government); and
- (c) Fellowships. As from 1978, the value of Type II fellowships has been estimated on the basis of pro forma rates established for "average" and "above average" cost countries, multiplied by the duration of the award in months. The estimated travel costs have been added if they were paid by the host country. (Training course stipends and subsistence allowances paid under this heading, however, are based on actual payments.)

These values and the totals in which they are included must therefore be considered as approximations.

2. Assistance provided

66. The financial statistics given in Tables 4, 5A, 5B and 7 relate, in the first instance, to actual cash payments against 1979 and prior years' obligations (shown according to the year(s) in which the cash payments were made) plus the total value of the assistance in kind (shown according to the year(s) in which it was provided). Thus, the balance of funds – for example, obligated but not spent in 1979 – is not included in the financial data relating to the assistance provided, but is shown separately in column 9 (see, for example, the 1979 entries in Table 7); the total cumulative balance of funds obligated in 1979 and prior years, but not yet spent as at 31 December 1979, is given at the bottom of this column in Tables 4 and 7.

67. Assistance in kind has been separated into two parts. The first part consists of assistance which has been provided – for example, fellowship training already provided – expressed in terms of estimated cash expenditures. The second part is made up of assistance which is in the process of being provided – for example, fellowship training not yet completed – which is equivalent to unliquidated obligations (see column (10) in Tables 4 and 7). The provision of expert services and equipment in kind has been shown in the same way.

68. As the Agency exercises no financial control over assistance provided in kind, delay is occasionally experienced in receiving information on equipment deliveries, interruption in fellowship training, etc.

3. Types of assistance

69. (a) Experts. When not shown separately, the assignments of lecturers and visiting professors are included under the heading "Experts". With regard to Table 6, it should be noted that under "Inter-country programmes" the assignments of a number of experts are not sub-divided by region but included, with associated training awards, under the heading "short-term training projects";

- (b) Equipment. As can best be seen in Table 7, the total assistance provided under this heading is the sum of the amounts disbursed for equipment and supplies in respect of country and intercountry programmes; and
- (c) Fellowships. In Table 3, where awards are classified by place of study, columns relating to short-term regional training projects and scientific visits have been introduced in order to reflect more accurately the valuable contribution made by host countries. The UNDP and Agency country awards shown in Tables 3 and 6 constitute the total effective awards as of 31 December 1979 (all notifications of non-acceptance by the proposed host countries and of withdrawals by the nominating countries communicated to the Agency by the close of the year have been taken into account). In Table 6 the number of fellowships classified by nationality does not include awards for short-term training projects and scientific visits, since their inclusion would significantly distort the statistics relating primarily to holders of fellowships of 6–12 months' duration. Although awards for short-term training projects and scientific visits are included in Table 6 under "UNDP" and "Agency" and are financed under "in kind" and "multi-bilateral" arrangements, the regular programme or UNDP, they are not in the same category as Agency or UNDP country awards. Furthermore, in the financial summaries (Tables 7 and 8) the expenditure on, for example, short-term training projects is not shown as assistance to individual countries but to "Intercountry programmes". None of the tables includes any reference to local participants in short-term training projects (see Annex II).

4. Miscellaneous items

- 70. (a) Intercountry programmes. In the broadest sense, this heading covers expenditure on regional projects for which experts' services only were provided (for example, by regional advisers), regional and interregional projects for which experts, equipment and fellowships were provided (for example, training courses), and regional and interregional projects for which fellowships only were provided (for example, scientific visits).
- (b) Subcontract activities and funds-in-trust arrangements. The statistical tables do not include data relating to services provided by the Agency under subcontracts to other organizations, or in respect of projects carried out for developing countries and financed by them under funds-in-trust arrangements (see Annex I.B).
- (c) Figures and percentages. Due to the rounding-off of monetary amounts to the nearest hundred or thousand dollars, the totals indicated in various places may differ slightly. In preparing figures and tables, percentages have also been rounded off.

B. TECHNICAL ASSISTANCE RESOURCES

Table 1
Available resources: 1970-1979
(in thousands of dollars)

Year	Agency				Sub-totals		TOTAL (1) + (2) (3)
	Voluntary contributions (1a)	Miscellaneous income (1b)	Extrabudgetary funds (1c)	In kind ^a (1d)	Agency (1)	UNDP (2)	
1970	1 535	214	61	894	2 704	1 469	4 173
1971	2 073	152	218	1 197	3 640	1 839	5 479
1972	2 486	150	60	900	3 596	2 072	5 668
1973	2 847	278	267	1 032	4 424	1 964	6 388
1974	3 085	263	367	1 114	4 829	3 082	7 911
1975	4 219	320	110	1 212	5 861	3 942	9 803
1976	5 062	430	648	1 737	7 877	3 002	10 879
1977	5 449	513	1 966	1 648	9 576	2 144	11 720
1978	6 451	670	2 849	2 104	12 074	2 954	15 028
1979	8 059	740	2 181	2 462	13 442	4 060	17 502
1970-1979	41 266	3 730	8 727	14 300	68 023	26 528	94 551

^a Estimated; see Introductory Notes, paras 64 and 65.

Table 2
Funds for the Agency's regular programme of technical assistance: 1970-1979
(in thousands of dollars)

Item	1970-75	1976	1977	1978	1979	1970-79
Target for voluntary contributions to the General Fund	18 000	5 500	6 000	7 000	8 500	45 000
Share of target budgeted for technical assistance ^a	17 814	5 500	6 000	7 000	8 500	44 814
Amount pledged	16 453	5 062	5 449	6 451	8 059	41 474
Actually made available for technical assistance, by programme year ^b	17 622	5 492	5 962	7 121	8 799	44 996

^a Until 1972 a share of the funds from voluntary contributions was used to support other operational programme activities of the Agency.

^b The funds from voluntary contributions are supplemented by miscellaneous income accruing to the General Fund and to Operating Fund II, which explains why the amount actually made available for technical assistance exceeded the amount pledged.

Table 3
Experts (classified by place of origin) and fellowship awards
(classified by place of study): 1979

Place of origin of experts or place of study for fellowship award holders	Experts			Fellowship awards					TOTAL
	UNDP	Agency	TOTAL	UNDP		Agency			
				Country	Regional	Country	Regional	Scientific visits	
Algeria	-	1	1	-	-	-	-	-	-
Argentina	1	8	9	5	-	6	-	3	14
Australia	4	8	12	-	8	-	-	-	8
Austria	-	7	7	2	-	2	-	-	4
Bangladesh	-	2	2	-	-	-	-	-	-
Belgium	-	4	4	1	-	6	-	3	10
Brazil	-	6	6	1	-	10	-	3	14
Canada	4	14	18	-	-	12	-	3	15
Chile	2	1	3	-	-	-	-	1	1
Colombia	-	-	-	1	-	-	-	-	1
Costa Rica	-	-	-	-	-	-	12	-	12
Cuba	-	-	-	-	-	-	16	-	16
Czechoslovakia	-	6	6	-	-	5	43	-	48
Denmark	-	-	-	1	-	4	-	-	5
Egypt	2	1	3	-	-	1	-	-	1
Finland	-	9	9	-	-	2	-	4	6
France	2	18	20	7	-	28	30	14	79
German D.R.	-	4	4	1	-	1	62	-	64
Germany, F.R.	4	38	42	9	-	34	56	18	117
Greece	-	1	1	-	-	-	-	1	1
Hungary	2	2	4	-	-	6	18	-	24
India	2	13	15	2	-	7	-	2	11
Indonesia	-	-	-	-	-	-	17	-	17
Ireland	-	-	-	-	-	2	18	-	20
Israel	1	2	3	-	-	-	-	3	3
Italy	4	4	8	2	-	17	-	3	22
Japan	-	2	2	-	-	10	-	2	12
Kenya	-	-	-	-	-	-	12	-	12
Mexico	-	3	3	-	-	1	-	1	2
Monaco	-	-	-	-	-	2	-	-	2
Netherlands	1	2	3	1	-	13	15	1	30
New Zealand	-	3	3	-	-	-	-	-	-
Norway	-	1	1	-	-	1	-	-	1
Philippines	-	2	2	-	-	1	-	-	1
Poland	1	7	8	-	-	6	20	1	27
Romania	-	1	1	-	-	1	-	-	1
Senegal	-	-	-	-	-	1	-	-	1
Spain	12	8	20	7	-	4	23	13	47
South Africa	-	1	1	-	-	-	-	-	-
Sri Lanka	-	-	-	-	20	-	-	-	20
Sudan	1	2	3	-	-	-	-	-	-
Sweden	1	8	9	2	-	5	-	4	11
Switzerland	-	3	3	1	-	6	-	-	7
Turkey	-	2	2	-	-	-	-	-	-
USSR	-	1	1	-	-	-	51	-	51
UK	9	21	30	4	-	56	-	10	70
USA	9	49	58	5	-	163	135	11	314
Yugoslavia	2	8	10	2	-	2	-	3	7
IAEA	8	88	96	3	-	7	67	12	89
Other international organizations	4	5	9	-	-	-	-	-	-
TOTAL	76	366	442	57	20	430	595	116	1 218^a

^a The difference between the number of awards (1039) and the number of places of study (1218) is due to the fact that a number of fellows, study tour participants and holders of awards for scientific visits went to more than one place of study.

C. DISTRIBUTION OF TECHNICAL ASSISTANCE

Table 4

Types of technical assistance: 1970-1979
(in thousands of dollars)

TYPE	Experts		Visiting professors/ missions		Equipment		Fellowships		Scientific visits		Intercountry projects		Sub-contracts		TOTAL		Assistance outstanding at 31 December 1979		TOTAL (8) + (9) + (10)	
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)	(10)		
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	\$		
1970-75																				
UNDP funds	5 569.0	38.8	-	-	4 927.0	34.3	1 353.4	9.4	-	-	1 291.0	9.0	1 227.0	8.5	14 367.4	100.0	-	-	14 367.4	
Agency funds	4 978.5	33.6	259.6	1.7	4 809.4	32.5	3 182.8	21.5	294.1	2.0	1 288.1	8.7	-	-	14 812.5	100.0	-	-	14 812.5	
Assistance in kind ^a	162.4	2.6	-	-	1 600.9	25.4	3 928.1	62.2	-	-	619.0	9.8	-	-	6 310.4	100.0	-	-	6 310.4	
TOTAL	10 709.9	30.2	259.6	0.7	11 337.3	31.9	8 464.3	23.9	294.1	0.8	3 198.1	9.0	1 227.0	3.5	35 490.3	100.0	-	-	35 490.3	
1976																				
UNDP funds	1 259.6	42.0	-	-	913.6	30.4	368.5	12.3	-	-	148.0	4.9	312.6	10.4	3 002.3	100.0	-	-	3 002.3	
Agency funds	1 231.6	31.1	2.8	0.1	1 340.9	33.9	722.5	18.3	99.6	2.5	557.3	14.1	-	-	3 954.7	100.0	-	-	3 954.7	
Assistance in kind ^a	84.1	6.1	-	-	400.9	29.0	836.3	60.6	-	-	59.0	4.3	-	-	1 380.3	100.0	-	-	1 380.3	
TOTAL	2 575.3	30.9	2.8	0.0	2 655.4	31.9	1 927.3	23.1	99.6	1.2	764.3	9.2	312.6	3.7	8 337.3	100.0	-	-	8 337.3	
1977																				
UNDP funds	1 005.5	46.9	-	-	720.6	33.6	237.8	11.1	-	-	22.0	1.0	158.5	7.4	2 144.4	100.0	-	-	2 144.4	
Agency funds	1 820.5	36.4	20.9	0.4	1 656.6	33.2	675.8	13.5	114.5	2.3	708.8	14.2	-	-	4 997.1	100.0	-	-	4 997.1	
Extrabudgetary funds	107.2	17.8	-	-	149.3	24.8	118.7	19.7	0.2	0.0	227.0	37.7	-	-	602.4	100.0	-	-	602.4	
Assistance in kind ^a	16.9	1.3	-	-	273.9	21.3	924.6	72.0	3.4	0.3	65.5	5.1	-	-	1 284.3	100.0	-	-	1 284.3	
TOTAL	2 950.1	32.7	20.9	0.2	2 800.4	31.0	1 956.9	21.7	118.1	1.3	1 023.3	11.3	158.5	1.8	9 028.2	100.0	-	-	9 028.2	
1978																				
UNDP funds	1 182.5	40.0	-	-	1 268.6	43.0	341.7	11.6	-	-	36.5	1.2	124.7	4.2	2 954.0	100.0	-	-	2 954.0	
Agency funds	1 843.4	28.2	19.5	0.3	2 978.5	45.6	704.8	10.8	101.9	1.6	879.4	13.5	-	-	6 527.5	100.0	-	-	6 527.5	
Extrabudgetary funds	236.1	15.3	-	-	998.5	64.9	135.3	8.8	4.6	0.3	164.7	10.7	-	-	1 539.2	100.0	-	-	1 539.2	
Assistance in kind ^a	22.0	1.1	-	-	51.4	2.6	1 685.4	84.8	7.3	0.4	220.7	11.1	-	-	1 986.8	100.0	-	-	1 986.8	
TOTAL	3 284.0	25.2	19.5	0.2	5 297.0	40.7	2 867.2	22.0	113.8	0.9	1 301.3	10.0	124.7	1.0	13 007.5	100.0	-	-	13 007.5	
1979																				
UNDP funds	1 286.0	31.7	-	-	1 808.9	44.5	306.8	7.6	-	-	52.3	1.3	605.6	14.9	4 059.6	100.0	2 948.6	-	7 008.2	
Agency funds	1 760.8	24.7	22.0	0.3	2 726.5	38.2	823.3	11.6	125.0	1.8	1 666.3	23.4	-	-	7 123.9	100.0	5 269.7	-	12 393.6	
Extrabudgetary funds	337.5	14.2	-	-	1 411.6	59.5	339.9	14.3	3.1	0.1	259.0	10.7	28.6	1.2	2 379.7	100.0	1 439.8	-	3 819.5	
Assistance in kind ^a	67.7	3.4	-	-	24.8	1.2	1 687.5	83.7	5.5	0.3	229.3	11.4	-	-	2 014.8	100.0	-	1 932.2	3 947.0	
TOTAL	3 452.0	22.2	22.0	0.1	5 971.8	38.3	3 157.5	20.3	133.6	0.9	2 206.9	14.1	634.2	4.1	15 578.0	100.0	9 658.1	1 932.2	27 168.3	
1970-1979																				
UNDP funds	10 302.6	38.8	-	-	9 638.7	36.3	2 608.2	9.8	-	-	1 549.8	5.9	2 428.4	9.2	26 527.7	100.0	2 948.6	-	29 476.3	
Agency funds	11 634.8	31.1	324.8	0.9	13 511.9	36.1	6 109.2	16.3	735.1	2.0	5 099.9	13.6	-	-	37 415.7	100.0	5 269.7	-	42 685.4	
Extrabudgetary funds	680.8	15.1	-	-	2 559.4	56.6	593.9	13.1	7.9	0.2	650.7	14.4	28.6	0.6	4 521.3	100.0	1 439.8	-	5 961.1	
Assistance in kind ^a	353.1	2.7	-	-	2 351.9	18.1	9 061.9	69.9	16.2	0.1	1 193.5	9.2	-	-	12 976.6	100.0	-	1 932.2	14 908.8	
GRAND TOTAL	22 971.3	28.2	324.8	0.4	28 061.9	34.5	18 373.2	22.6	759.2	0.9	8 493.9	10.4	2 457.0	3.0	81 441.3	100.0	9 658.1	1 932.2	93 031.6	

^a Estimated, see Introductory Notes, paras 67 and 68.

Table 5A
Status of monetary resources and expenditures for the Agency's
regular programme of technical assistance
as at 31 December 1979
(in thousands of dollars)

Programme year	Monetary resources made available	Year of expenditure											Total expenditures 1958-1979	Unliquidated obligations	Earmarkings	Programme savings (deficit)
		1958-69	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979				
1958-1969	13 257	10 841	995	444	174	17	1	2	-	-	-	-	12 474	-	-	783
1970	1 749	-	624	775	405	144	23	23	3	1	-	-	1 998	-	-	(249)
1971	2 225	-	-	905	1 144	364	82	32	22	31	-	-	2 580	-	-	(355)
1972	2 636	-	-	-	833	1 193	458	167	70	38	2	-	2 761	-	-	(125)
1973	3 125	-	-	-	-	958	1 114	616	229	102	45	11	3 075	2	2	46
1974	3 348	-	-	-	-	-	735	1 373	657	287	93	47	3 192	63	126	(33)
1975	4 539	-	-	-	-	-	-	1 211	1 474	850	359	100	3 994	77	324	144
1976	5 492	-	-	-	-	-	-	-	1 500	1 917	1 114	356	4 914	150	437	(9)
1977	5 962	-	-	-	-	-	-	-	-	1 771	2 292	1 237	5 300	233	522	(93)
1978	7 121	-	-	-	-	-	-	-	-	-	2 595	2 655	5 250	425	1 400	46
1979	8 799	-	-	-	-	-	-	-	-	-	-	2 718	2 718	3 254	2 774	53
TOTAL	58 253	10 841	1 619	2 124	2 556	2 676	2 413	3 424	3 955	4 997	6 527	7 124	48 256	4 204^a	5 585^b	208

^a Does not include unliquidated obligations totalling \$1 066 000 for future-year components of multi-year projects.

^b The difference between the unobligated balance in Operating Fund II of \$4 727 000 (see Statement III.A of the Agency's Accounts for 1979) and total earmarkings of \$5 585 000 is the \$1 066 000 in unliquidated obligations mentioned in footnote a above, less \$208 000, which is the cumulative programme savings as at 31 December 1979.

Table 5B

Status of extrabudgetary funds and expenditures for the Agency's
technical assistance activities as at 31 December 1979
(in thousands of dollars)

Programme year	Extrabudgetary funds made available	Year of expenditure											Total expenditures 1958-79	Unliquidated obligations	Unobligated balance
		1958-69	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979			
1958-69	147	63	46	20	18	-	-	-	-	-	-	-	147	-	-
1970	61	-	30	23	8	-	-	-	-	-	-	-	61	-	-
1971	218	-	-	17	49	9	21	18	9	22	5	5	150	11	52
1972	60	-	-	-	11	25	7	-	-	-	-	-	43	-	17
1973	267	-	-	-	-	53	79	96	4	19	-	-	251	-	16
1974	367	-	-	-	-	-	63	102	173	12	19	-	369	-	(2)
1975	110	-	-	-	-	-	-	37	10	59	-	-	106	-	4
1976	648	-	-	-	-	-	-	-	162	197	197	71	627	1	20
1977	1 966	-	-	-	-	-	-	-	-	293	911	505	1 709	59	198
1978	2 849	-	-	-	-	-	-	-	-	-	408	1 324	1 732	768	349
1979	2 181 ^a	-	-	-	-	-	-	-	-	-	-	475	475	600	1 106
TOTAL	8 874	63	76	60	86	87	170	253	358	602	1 540	2 380	5 675	1 439	1 760

^a Does not include funds totalling \$143 070 which were received in 1979 in respect of technical assistance activities programmed for 1980, namely, \$60 000 from Denmark and \$83 070 from the Federal Republic of Germany.

Table 6

Recipients of expert services and fellowship awards: 1979

RECIPIENT	Number of expert assignments, classified by location of duty station						Number of fellowship awards, classified by nationality of award holder					
	UNDP		Agency		TOTAL		UNDP		Agency		TOTAL	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Afghanistan	10	30	1	12	11	42	--	--	5	36	5	36
Albania	--	--	1	3	1	3	--	--	2	6	2	6
Algeria	--	--	4	1	4	1	--	--	--	--	--	--
Argentina	--	--	12	22	12	22	1	3	7	60	8	63
Bangladesh	--	--	12	24	12	24	--	--	14	128	14	128
Bolivia	--	--	4	11	4	11	--	--	2	24	2	24
Brazil	6	34	19	33	25	67	4	19	2	24	6	43
Bulgaria	1	1	--	--	1	1	6	11	6	72	12	83
Burma	--	--	1	1	1	1	--	--	1	12	1	12
Chad	2	13	--	--	2	13	--	--	--	--	--	--
Chile	21	47	3	3	24	50	6	42	16	77	22	119
Colombia	6	19	3	5	9	24	--	--	2	19	2	19
Costa Rica	--	--	1	11	1	11	--	--	3	28	3	28
Cuba	--	--	4	12	4	12	--	--	2	20	2	20
Cyprus	--	--	1	1	1	1	--	--	--	--	--	--
Czechoslovakia	--	--	--	--	--	--	--	--	6	57	6	57
Dem. P.R. Korea	--	--	--	--	--	--	--	--	7	72	7	72
Ecuador	--	--	6	13	6	13	--	--	2	16	2	16
Egypt	--	--	4	6	4	6	--	--	16	132	16	132
El Salvador	--	--	1	1	1	1	--	--	3	21	3	21
Ethiopia	1	10	1	1	2	11	1	4	1	12	2	16
Ghana	--	--	2	1	2	1	1	6	25	270	26	276
Greece	1	4	1	1	2	5	--	--	9	67	9	67
Guatemala	--	--	2	1	2	1	--	--	--	--	--	--
Hungary	--	--	1	1	1	1	--	--	7	69	7	69
Iceland	--	--	2	1	2	1	--	--	1	12	1	12
India	2	2	6	10	8	12	--	--	38	246	38	246
Indonesia	--	--	13	15	13	15	--	--	3	9	3	9
Iran	--	--	1	6	1	6	--	--	1	4	1	4
Iraq	--	--	--	--	--	--	--	--	2	12	2	12
Israel	--	--	1	1	1	1	--	--	1	9	1	9
Ivory Coast	--	--	5	6	5	6	--	--	--	--	--	--
Jamaica	--	--	1	3	1	3	--	--	--	--	--	--
Jordan	--	--	2	8	2	8	--	--	5	26	5	26
Kenya	--	--	3	6	3	6	--	--	3	36	3	36
Korea, R.	--	--	15	21	15	21	--	--	12	112	12	112
Lebanon	--	--	--	--	--	--	--	--	1	12	1	12
Libyan A.J.	--	--	--	--	--	--	--	--	2	18	2	18
Madagascar	2	7	2	6	4	13	--	--	1	5	1	5
Malaysia	--	--	14	24	14	24	--	--	16	136	16	136
Mali	--	--	2	1	2	1	--	--	8	43	8	43
Mauritius	--	--	1	1	1	1	--	--	--	--	--	--
Mexico	--	--	10	20	10	20	--	--	--	--	--	--
Mongolia	--	--	2	5	2	5	--	--	--	--	--	--
Morocco	4	7	3	8	7	15	--	--	3	6	3	6
Niger	--	--	--	--	--	--	--	--	1	12	1	12
Nigeria	3	28	9	20	12	48	1	12	5	36	6	48
Niue	1	1	--	--	1	1	--	--	--	--	--	--
Pakistan	--	--	4	4	4	4	--	--	24	246	24	246
Panama	--	--	1	1	1	1	--	--	2	15	2	15
Paraguay	--	--	2	4	2	4	--	--	1	5	1	5
Peru	5	22	5	12	10	34	8	52	9	90	17	142
Philippines	2	4	10	26	12	30	1	1	26	191	27	192
Poland	--	--	2	2	2	2	--	--	13	115	13	115
Portugal	--	--	3	2	3	2	--	--	--	--	--	--

RECIPIENT	Number of expert assignments, classified by location of duty station						Number of fellowship awards, classified by nationality of award holder					
	UNDP		Agency		TOTAL		UNDP		Agency		TOTAL	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Romania	3	1	1	3	4	4	5	7	--	--	5	7
Senegal	--	--	4	4	4	4	--	--	4	40	4	40
Sierra Leone	--	--	--	--	--	--	--	--	1	12	1	12
Spain	--	--	1	12	1	12	--	--	--	--	--	--
Sri Lanka	--	--	5	12	5	12	2	5	16	141	18	146
Sudan	--	--	7	6	7	6	--	--	12	121	12	121
Syrian A.R.	4	7	2	1	6	8	--	--	--	--	--	--
Thailand	--	--	6	8	6	8	--	--	16	152	16	152
Tunisia	--	--	2	13	2	13	--	--	--	--	--	--
Turkey	1	1	11	8	12	9	--	--	24	243	24	243
Uganda	--	--	1	1	1	1	--	--	--	--	--	--
U.R. Cameroon	--	--	1	1	1	1	--	--	--	--	--	--
U.R. Tanzania	--	--	3	10	3	10	--	--	5	52	5	52
Uruguay	--	--	6	17	6	17	--	--	2	7	2	7
Venezuela	--	--	2	3	2	3	--	--	1	2	1	2
Viet Nam	--	--	1	1	1	1	--	--	--	--	--	--
Yugoslavia	1	1	4	3	5	4	3	7	10	72	13	79
Zaire	--	--	1	1	1	1	1	6	5	38	6	44
Zambia	--	--	5	14	5	14	--	--	4	33	4	33
Sub-total	76	239	266	495	342	734	40	175	416	3531	456	3706
<i>Inter-country programmes</i>												
Regional projects	--	--	4	4	4	4	--	--	--	--	--	--
Short-term training projects	7	3	182	73	189	76	20	19	509	730	529	749
Scientific visits	--	--	--	--	--	--	--	--	54	42	54	42
Sub-total	7	3	186	77	193	80	20	19	563	772	583	791
GRAND TOTAL	83	242	452	572	535^a	814	60	194	979	4303	1039	4497

(1) Number of expert assignments or fellowship awards.

(2) Number of man-months.

^a The difference between the number of assignments (535) and the number of experts (442) is due to the fact that several experts served in more than one country.

Table 7

Financial summary: 1979
(in thousands of dollars)

RECIPIENT	Assistance provided, by type				Assistance provided, by source					Assistance outstanding at 31 December 1979		TOTAL (8) + (9) + (10)
	Experts	Equip- ment	Fellow- ships	TOTAL	UNDP	Agency	Extra- budgetary funds	In kind ^a	TOTAL	Unliqui- dated obl- igations	In-kind balance	
	(1)	(2)	(3)	(4)	(5)	(6a)	(6b)	(7)	(8)	(9)	(10)	
Afghanistan	47.1	34.1	17.0	98.2	-	88.6	-	9.6	98.2	53.9	19.3	171.4
Albania	10.8	123.1	-	133.9	3.7	130.2	-	-	133.9	0.4	4.2	138.5
Algeria	3.4	-	-	3.4	-	3.4	-	-	3.4	5.3	-	8.7
Argentina	318.6	18.5	97.1	434.2	254.1	133.0	3.0	44.1	434.2	411.4	38.1	883.7
Bangladesh	27.5	50.5	109.4	187.4	1.2	106.0	6.4	73.8	187.4	86.4	63.6	337.4
Bolivia	42.8	69.6	4.8	117.2	-	70.7	41.7	4.8	117.2	50.7	35.4	203.3
Brazil	364.2	1065.8	75.7	1505.7	1292.1	184.3	-	29.3	1505.7	48.6	-	1554.3
Bulgaria	4.8	159.5	62.1	226.4	89.8	117.9	-	18.7	226.4	158.5	11.8	396.7
Burma	7.4	23.5	18.5	49.4	-	49.4	-	-	49.4	57.1	18.0	124.5
Chad	58.0	1.3	-	59.3	59.3	-	-	-	59.3	4.7	-	64.0
Chile	279.9	279.8	192.3	752.0	615.4	78.7	-	57.9	752.0	299.9	32.2	1084.1
Colombia	120.7	449.7	75.5	645.9	550.9	19.5	-	75.5	645.9	79.6	33.1	758.6
Costa Rica	38.4	152.5	5.7	196.6	-	116.3	80.3	-	196.6	67.1	14.4	278.1
Cuba	55.4	85.6	10.7	151.7	10.6	129.9	2.1	9.1	151.7	636.8	8.4	796.9
Cyprus	1.1	12.2	-	13.3	-	13.3	-	-	13.3	-	-	13.3
Czechoslovakia	-	0.3	48.5	48.8	-	21.9	2.4	24.5	48.8	67.4	28.7	144.9
Dem. P.R. Korea	-	80.2	9.8	90.0	-	80.2	-	9.8	90.0	53.8	46.2	190.0
Ecuador	65.8	27.8	12.0	105.6	-	86.7	7.9	11.0	105.6	18.7	21.4	145.7
Egypt	28.4	304.8	88.3	421.5	178.5	174.1	5.7	63.2	421.5	680.0	98.6	1200.1
El Salvador	4.6	17.2	-	21.8	-	4.6	17.2	-	21.8	1.5	20.7	44.0
Ethiopia	45.4	24.3	7.0	76.7	70.1	6.6	-	-	76.7	31.7	-	108.4
Ghana	8.6	71.7	255.8	336.1	9.0	108.5	32.8	185.8	336.1	93.8	168.7	598.6
Greece	15.7	56.3	65.9	137.9	13.5	37.3	36.7	50.4	137.9	126.6	23.1	287.6
Guatemala	4.1	2.2	12.0	18.3	-	17.0	1.3	-	18.3	81.8	7.6	107.7
Hong Kong	-	0.5	-	0.5	-	0.5	-	-	0.5	-	-	0.5
Hungary	0.4	455.4	55.0	510.8	8.1	498.4	-	4.3	510.8	1082.8	8.4	1602.0
Iceland	2.7	29.4	1.9	34.0	-	34.0	-	-	34.0	0.3	14.4	48.7
India	7.9	57.6	96.3	161.8	1.2	97.7	8.5	54.4	161.8	359.5	165.3	686.6
Indonesia	68.3	92.7	11.4	172.4	12.9	101.7	57.2	0.6	172.4	69.2	14.4	256.0
Iran	-	-	9.8	9.8	-	3.2	2.4	4.2	9.8	10.5	-	20.3
Iraq	20.5	88.7	23.9	133.1	-	120.1	1.6	11.4	133.1	87.5	-	220.6
Israel	6.1	49.0	10.2	65.3	-	56.9	-	8.4	65.3	47.0	8.4	120.7
Ivory Coast	14.5	20.9	6.1	41.5	-	35.4	6.1	-	41.5	17.8	-	59.3
Jamaica	12.3	0.9	-	13.2	-	13.2	-	-	13.2	5.0	-	18.2
Jordan	29.0	91.0	17.0	137.0	-	108.6	20.0	8.4	137.0	31.4	4.2	172.6
Kenya	33.6	39.2	15.5	88.3	-	39.7	41.6	7.0	88.3	89.8	-	178.1
Korea, R.	120.6	79.8	144.9	345.3	-	137.0	100.6	107.7	345.3	60.7	64.6	470.6
Lebanon	-	-	12.3	12.3	-	-	12.3	-	12.3	8.4	-	20.7
Libyan A.J.	-	77.2	27.7	104.9	-	90.5	-	14.4	104.9	14.3	7.2	126.4
Madagascar	43.3	111.6	1.6	156.5	76.1	75.0	5.4	-	156.5	119.7	-	276.2
Malaysia	108.6	204.9	29.7	343.2	-	161.5	159.3	22.4	343.2	138.1	50.2	531.5
Mali	23.0	29.1	16.7	68.8	-	52.1	4.1	12.6	68.8	76.0	4.2	149.0
Mauritius	2.5	5.4	2.7	10.6	-	7.9	2.7	-	10.6	2.0	-	12.6
Mexico	106.3	26.2	7.4	139.9	-	83.6	47.3	9.0	139.9	114.3	11.4	265.6
Mongolia	20.2	130.2	-	150.4	-	150.4	-	-	150.4	40.2	-	190.6
Morocco	62.9	58.7	7.1	128.7	57.5	61.7	3.2	6.3	128.7	43.1	-	171.8
Nicaragua	-	-	-	-	-	-	-	-	-	0.7	-	0.7
Niger	4.3	27.5	1.4	33.2	-	31.8	-	1.4	33.2	2.6	7.0	42.8
Nigeria	126.7	25.5	75.0	227.2	166.2	(1.6)	0.2	62.4	227.2	26.5	27.6	281.3
Niue	7.8	6.9	-	14.7	14.7	-	-	-	14.7	-	-	14.7
Pakistan	17.4	74.0	269.6	361.0	8.0	202.3	10.6	140.1	361.0	146.9	174.4	682.3
Panama	5.2	-	32.6	37.8	-	12.9	-	24.9	37.8	-	30.0	67.8
Paraguay	12.7	3.6	0.7	17.0	-	12.7	3.6	0.7	17.0	3.8	-	20.8
Peru	157.0	219.8	51.8	428.6	248.6	115.0	45.2	19.8	428.6	700.7	116.0	1245.3
Philippines	142.8	89.4	198.6	430.8	37.8	117.1	136.3	139.6	430.8	117.3	128.4	676.5

RECIPIENT	Assistance provided, by type				Assistance provided, by source				Assistance outstanding at 31 December 1979			TOTAL (8) + (9) + (10)
	Experts	Equip- ment	Fellow- ships	TOTAL	UNDP	Agency	Extra- budgetary funds	In kind ^a	TOTAL	Unliqui- dated obli- gations	In kind balance	
	(1)	(2)	(3)	(4)	(5)	(6a)	(6b)	(7)	(8)	(9)	(10)	
Poland	5.5	0.2	93.7	99.4	—	43.4	—	56.0	99.4	106.7	10.3	216.4
Portugal	14.4	90.7	8.9	114.0	—	52.8	61.2	—	114.0	21.2	3.6	138.8
Romania	56.7	143.2	9.1	209.0	135.4	34.3	39.3	—	209.0	288.7	—	497.7
St Kitts	—	—	4.3	4.3	—	—	4.3	—	4.3	1.9	—	6.2
Senegal	19.9	28.1	29.8	77.8	—	49.4	15.8	12.6	77.8	31.2	5.6	114.6
Sierra Leone	—	—	1.9	1.9	—	—	1.9	—	1.9	8.4	—	10.3
Singapore	—	23.6	4.1	27.7	—	27.7	—	—	27.7	2.4	—	30.1
Spain	52.9	—	3.1	56.0	—	56.0	—	—	56.0	2.1	—	58.1
Sri Lanka	38.3	136.1	123.9	298.3	15.9	169.5	80.8	32.1	298.3	226.1	57.5	581.9
Sudan	36.3	15.8	63.5	115.6	1.0	81.6	13.7	19.3	115.6	120.6	28.9	265.1
Syrian A.R.	26.7	12.6	7.8	47.1	33.7	13.4	—	—	47.1	10.1	—	57.2
Thailand	28.5	106.9	143.2	278.6	—	141.9	43.9	92.8	278.6	139.2	87.2	505.0
Tunisia	60.6	20.9	—	81.5	—	81.5	—	—	81.5	8.0	—	89.5
Turkey	42.2	1.3	197.5	241.0	3.6	77.1	12.3	148.0	241.0	126.4	108.4	475.8
Uganda	8.0	6.2	—	14.2	—	14.2	—	—	14.2	8.8	—	23.0
U.R. Cameroon	8.8	2.7	—	11.5	—	8.8	2.7	—	11.5	0.1	—	11.6
U.R. Tanzania	36.7	5.2	2.4	44.3	—	41.9	2.4	—	44.3	37.5	28.8	110.6
Uruguay	66.2	36.1	23.9	126.2	—	83.8	27.7	14.7	126.2	113.8	—	240.0
Venezuela	15.8	—	5.3	21.1	—	20.2	—	0.9	21.1	11.7	—	32.8
Viet Nam	2.2	30.1	—	32.3	—	32.3	—	—	32.3	74.1	—	106.4
Yugoslavia	21.7	76.8	62.7	161.2	31.0	75.4	53.3	1.5	161.2	238.3	1.4	400.9
Zaire	14.0	44.3	56.8	115.1	7.4	45.3	27.5	34.9	115.1	115.7	23.1	253.9
Zambia	45.2	22.9	32.6	100.7	—	83.3	3.0	14.4	100.7	38.4	28.8	167.9
Sub-total	3309.9	6009.3	3169.5	12488.7	4007.3	5431.2	1295.5	1754.7	12488.7	8263.2	1913.2	22665.1
<i>Inter-country programmes</i>												
Asia and the Pacific	55.1	16.7	45.4	117.2	52.3	12.1	31.9	20.9	117.2	55.7	—	172.9
Latin America	36.2	26.6	20.4	83.2	—	67.5	0.1	15.6	83.2	—	—	83.2
Interregional	356.2	139.0	1511.3	2006.5	—	1586.7	227.0	192.8	2006.5	818.9	—	2825.4
Sub-total	447.5	182.3	1577.1	2206.9	52.3	1666.3	259.0	229.3	2206.9	874.6	—	3081.5
<u>SIDA large-scale assistance</u>												
Bangladesh	80.5	25.9	58.9	165.3	—	—	165.3	—	165.3	84.7	—	250.0
India	25.6	360.3	61.9	447.8	—	—	447.8	—	447.8	360.8	—	808.6
<u>Other multi-bilateral assistance</u>												
Nigeria	86.8	156.1	—	242.9	—	—	212.1	30.8	242.9	74.8	19.0	336.7
Miscellaneous	11.2	14.4	0.8	26.4	—	26.4	—	—	26.4	—	—	26.4
GRAND TOTAL	3961.5	6748.3	4868.2	15578.0	4059.6	7123.9	2379.7	2014.8	15578.0	9658.1	1932.2	27168.3

^a Assistance in kind can only be estimated; see Introductory Notes, paras 67 and 68.

Table 8
Financial summary: 1958-1979
(in thousands of dollars)

RECIPIENT	Assistance provided, by type				Assistance provided, by source				
	Experts	Equip- ment	Fellow- ships	TOTAL	UNDP	Agency	Extra- budgetary funds ^a	In kind ^b	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6a)	(6b)	(7)	(8)
Afghanistan	261.5	176.2	91.4	529.1	92.9	364.7	-	71.5	529.1
Albania	36.5	343.8	35.4	415.7	117.5	283.7	-	14.5	415.7
Algeria	28.2	24.4	75.1	127.7	21.7	95.9	-	10.1	127.7
Argentina	1731.7	889.8	996.8	3618.3	1732.6	1387.4	3.0	495.3	3618.3
Austria	62.0	13.8	120.7	196.5	-	132.6	-	63.9	196.5
Bangladesh	112.9	312.4	502.7	928.0	37.0	534.3	21.9	334.8	928.0
Bolivia	255.3	335.7	157.7	748.7	153.4	436.2	61.9	97.2	748.7
Brazil	2630.3	2546.9	1004.7	6181.9	4266.7	1447.0	-	468.2	6181.9
Bulgaria	48.3	503.0	722.3	1273.6	170.3	790.0	-	313.3	1273.6
Burma	622.1	451.8	186.5	1260.4	537.0	644.4	-	79.0	1260.4
Chad	58.0	1.3	-	59.3	59.3	-	-	-	59.3
Chile	1683.2	1329.7	838.9	3851.8	2800.6	772.7	-	278.5	3851.8
China	229.7	166.2	554.9	950.8	281.5	307.7	-	361.6	950.8
Colombia	458.5	844.2	311.9	1614.6	707.7	501.5	-	405.4	1614.6
Costa Rica	244.8	320.3	74.9	640.0	-	426.7	102.7	110.6	640.0
Cuba	189.7	606.4	97.5	893.6	62.6	742.7	21.3	67.0	893.6
Cyprus	71.7	143.3	43.3	258.3	24.1	186.0	-	48.2	258.3
Czechoslovakia	-	0.3	647.9	648.2	6.2	332.6	2.4	307.0	648.2
Dem. Kampuchea	85.0	29.3	1.7	116.0	39.1	69.6	-	7.3	116.0
Dominican Republic	-	-	2.8	2.8	-	-	-	2.8	2.8
Dem. P.R. Korea	1.1	81.7	12.6	95.4	-	82.8	-	12.6	95.4
Ecuador	258.8	241.4	95.0	595.2	35.5	358.1	80.3	121.3	595.2
Egypt	497.1	1300.4	1284.6	3082.1	921.9	1303.1	10.6	846.5	3082.1
El Salvador	54.7	70.9	22.3	147.9	14.1	43.7	20.4	69.7	147.9
Ethiopia	259.3	100.9	65.3	425.5	173.7	218.5	-	33.3	425.5
Gabon	3.7	-	-	3.7	-	3.7	-	-	3.7
Ghana	360.4	537.9	778.2	1676.5	247.1	767.4	140.9	521.1	1676.5
Greece	1551.9	467.5	842.3	2861.7	1391.0	879.7	72.8	518.2	2861.7
Guatemala	88.2	128.3	47.8	264.3	56.2	115.1	8.0	85.0	264.3
Haiti	0.9	-	-	0.9	-	0.9	-	-	0.9
Hong Kong	59.9	102.5	20.6	183.0	-	174.0	-	9.0	183.0
Hungary	86.5	1664.1	824.1	2574.7	622.7	1692.6	-	259.4	2574.7
Iceland	41.4	219.3	43.5	304.2	-	241.1	-	63.1	304.2
India	816.6	2084.1	1933.7	4834.4	2637.7	1190.2	29.7	976.8	4834.4
Indonesia	944.7	681.8	772.5	2399.0	486.6	1304.7	74.9	532.8	2399.0
Iran	639.0	72.0	439.1	1150.1	455.4	428.3	2.4	264.0	1150.1
Iraq	378.2	719.5	645.9	1743.6	242.5	1142.3	12.1	346.7	1743.6
Israel	248.3	651.5	348.0	1247.8	170.9	732.8	-	344.1	1247.8
Ivory Coast	122.1	91.9	11.0	225.0	73.4	127.7	23.9	225.0	225.0
Jamaica	112.3	105.6	24.0	241.9	10.4	160.7	-	70.8	241.9
Jordan	260.8	238.4	129.0	628.2	89.3	392.8	84.6	61.5	628.2
Kenya	136.6	192.3	76.2	405.1	33.2	242.3	48.8	80.8	405.1
Korea, R	836.1	744.0	1312.1	2892.2	566.8	1248.5	150.9	926.0	2892.2
Kuwait	12.0	-	3.9	15.9	-	15.9	-	-	15.9
Lebanon	247.8	140.7	80.6	469.1	139.3	291.3	15.3	23.2	469.1
Liberia	115.2	29.0	-	144.2	60.2	27.7	-	56.3	144.2
Libyan A.J.	88.3	130.7	55.4	274.4	-	240.5	-	33.9	274.4
Madagascar	145.2	204.1	26.4	375.7	76.1	280.4	19.2	-	375.7
Malaysia	316.8	347.0	258.2	922.0	1.6	519.2	186.4	214.8	922.0
Mali	268.2	117.3	23.1	408.6	13.4	372.6	4.1	18.5	408.6
Mauritius	5.8	5.4	3.8	15.0	-	11.2	3.8	-	15.0
Mexico	1027.0	386.9	322.2	1736.1	419.3	1009.5	112.2	195.1	1736.1
Mongolia	57.9	311.5	17.2	386.6	-	369.4	10.6	6.6	386.6
Morocco	861.9	633.9	189.1	1684.9	845.3	606.9	66.6	166.1	1684.9
Nicaragua	26.5	7.6	20.1	54.2	-	54.2	-	-	54.2
Niger	10.8	36.5	1.4	48.7	-	47.3	-	1.4	48.7
Nigeria	669.5	275.6	239.0	1184.1	542.8	403.4	68.3	169.6	1184.1
Niue	7.8	6.9	-	14.7	14.7	-	-	-	14.7
Pakistan	1364.4	1454.9	1487.9	4307.2	1842.0	1627.4	19.4	819.4	4307.2
Panama	70.3	12.7	62.9	145.9	4.1	87.9	-	53.9	145.9

RECIPIENT	Assistance provided, by type				Assistance provided, by source				
	Experts	Equip- ment	Fellow- ships	TOTAL	UNDP	Agency	Extra- budgetary funds ^a	In kind ^b	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6a)	(6b)	(7)	(8)
Paraguay	50.4	78.7	39.2	168.3	—	75.2	74.1	19.0	168.3
Peru	892.8	697.2	251.9	1841.9	759.3	740.9	63.4	278.3	1841.9
Philippines	860.0	1185.7	1575.8	3621.5	988.1	1185.3	291.2	1156.9	3621.5
Poland	39.9	370.7	1135.9	1546.5	199.7	915.4	—	431.4	1546.5
Portugal	89.6	160.7	68.2	318.5	—	197.8	61.2	59.5	318.5
Romania	534.1	1745.1	670.5	2949.7	1566.2	1146.4	39.3	197.8	2949.7
St. Kitts	—	—	8.5	8.5	—	—	8.5	—	8.5
Saudi Arabia	28.1	2.9	12.8	43.8	—	36.8	—	7.0	43.8
Senegal	168.3	289.7	74.3	532.3	86.5	316.5	94.2	35.1	532.3
Sierra Leone	212.3	53.4	38.3	304.0	174.5	58.8	1.9	68.8	304.0
Singapore	128.9	311.9	48.5	489.3	—	436.5	—	52.8	489.3
Somalia	6.3	—	—	6.3	6.3	—	—	—	6.3
Spain	152.2	—	65.0	217.2	—	194.1	—	23.1	217.2
Sri Lanka	429.0	577.0	436.9	1442.9	160.7	957.0	102.8	222.4	1442.9
Sudan	405.2	368.4	423.9	1197.5	296.3	740.7	37.0	123.5	1197.5
Syrian A.R.	129.6	212.8	233.6	576.0	226.2	275.5	4.5	69.8	576.0
Thailand	957.7	626.1	1346.1	2929.9	545.5	1293.6	166.7	924.1	2929.9
Tunisia	350.7	193.5	149.3	693.5	141.2	486.1	—	66.2	693.5
Turkey	1236.8	928.6	1271.6	3437.0	1620.0	980.6	14.0	822.4	3437.0
Uganda	260.8	198.8	33.3	492.9	131.0	354.8	—	7.1	492.9
U.R. Cameroon	297.9	120.2	44.2	462.3	297.3	135.9	22.3	6.8	462.3
U.R. Tanzania	64.7	76.9	5.2	146.8	9.6	134.8	2.4	—	146.8
Uruguay	286.9	575.8	136.2	998.9	173.6	559.2	64.9	201.2	998.9
Venezuela	327.1	96.4	220.8	644.3	130.7	331.2	—	182.4	644.3
Viet Nam	76.6	173.9	141.6	392.1	31.4	205.5	—	155.2	392.1
Yugoslavia	533.4	1380.8	1101.5	3015.7	1643.0	902.4	123.8	346.5	3015.7
Zaire	317.3	195.0	244.4	756.7	17.0	550.4	28.8	160.5	756.7
Zambia	350.1	148.9	79.7	578.7	152.5	366.3	3.1	56.8	578.7
Other countries ^c	74.7	19.4	778.6	872.7	77.0	376.6	—	419.1	872.7
Sub-total	31124.8	34424.0	29621.9	95170.7	32731.0	42224.8	2683.5	17531.4	95170.7
<i>Intercountry programmes:</i>									
Africa	124.1	77.4	98.8	300.3	289.7	5.7	—	4.9	300.3
Asia and the Pacific	598.8	145.4	411.3	1155.5	693.7	318.7	33.2	109.9	1155.5
Europe	21.0	18.6	17.3	56.9	56.9	—	—	—	56.9
Latin America	796.5	777.1	229.0	1802.6	1458.2	152.6	109.3	82.5	1802.6
Middle East	5.8	1.2	5.3	12.3	12.3	—	—	—	12.3
Interregional	1903.2	728.2	5695.2	8326.6	1441.0	5342.0	508.2	1035.4	8326.6
Sub-total	3449.4	1747.9	6456.9	11654.2	3951.8	5819.0	650.7	1232.7	11654.2
<u>SIDA large-scale assistance</u>									
Bangladesh	277.4	398.6	125.7	801.7	—	—	449.7	352.0	801.7
India	28.5	360.3	61.9	450.7	—	—	450.7	—	450.7
<u>Other multi-bilateral assistance</u>									
Nigeria	145.4	172.1	—	317.5	—	—	286.7	30.8	317.5
Miscellaneous	148.7	81.3	5.4	235.4	23.2	212.2	—	—	235.4
GRAND TOTAL	35174.2	37184.2	36271.8	108630.2	36706.0	48256.0	4521.3	19146.9	108630.2

^a For 1977, 1978 and 1979; the assistance provided from extrabudgetary funds in earlier years is included under assistance in kind.

^b Assistance in kind can only be estimated; see Introductory Notes, paras 67 and 68.

^c Includes the following countries which have not received technical assistance during the last ten or more years: Denmark, Finland, France, Germany, F.R., Italy, Japan, Monaco, Netherlands, New Zealand, Norway, Rhodesia, South Africa, Sweden, Switzerland and the United States.

ANNEX I

UTILIZATION OF SPECIAL CONTRIBUTIONS

A. Value of technical assistance provided from extrabudgetary and in-kind contributions

(in thousands of dollars)

DONOR	Assistance provided, by source								TOTAL
	Extrabudgetary funds				In kind				
	Experts	Equipment	Training ¹	Sub-total	Experts	Equipment	Training ¹	Sub-total	
Algeria	--	--	--	--	--	--	0.6	0.6	0.6
Argentina	--	--	--	--	--	--	45.9	45.9	45.9
Australia	--	34.0	--	34.0	--	--	1.7	1.7	35.7
Austria	--	--	--	--	--	--	15.4	15.4	15.4
Belgium	7.7	53.4	--	61.1	--	--	30.8	30.8	91.9
Brazil	--	--	--	--	--	--	19.8	19.8	19.8
Bulgaria	--	--	--	--	--	--	5.6	5.6	5.6
Canada	4.6	5.3	--	9.9	--	--	12.2	12.2	22.1
Chile	--	--	--	--	--	--	2.0	2.0	2.0
Czechoslovakia	--	--	--	--	--	--	0.7	0.7	0.7
Denmark	--	--	--	--	--	--	29.4	29.4	29.4
Finland	--	--	--	--	--	--	1.9	1.9	1.9
France	--	--	--	--	7.7	--	61.0	68.7	68.7
German D.R.	--	--	--	--	--	--	1.3	1.3	1.3
Germany, F. R.	48.3	119.0	--	167.3	8.7	--	151.1	159.8	327.1
Hungary	--	--	--	--	--	--	9.1	9.1	9.1
India	--	--	--	--	--	--	32.9	32.9	32.9
Ireland	--	--	--	--	--	--	12.2	12.2	12.2
Israel	--	--	--	--	--	--	20.2	20.2	20.2
Italy	--	--	--	--	--	--	106.7	106.7	106.7
Japan	10.4	28.5	--	38.9	--	--	61.2	61.2	100.1
Mexico	--	--	--	--	--	--	2.1	2.1	2.1
Netherlands	--	--	--	--	--	--	34.3	34.3	34.3
Poland	--	--	--	--	--	--	30.7	30.7	30.7
Romania	--	--	--	--	--	--	12.6	12.6	12.6
Spain	--	--	--	--	1.3	--	35.5	36.8	36.8
Sudan	--	--	--	--	--	--	1.1	1.1	1.1
Sweden	106.1	386.2	560.1	1 052.4	--	--	5.7	5.7	1 058.1
Turkey	--	--	--	--	--	--	6.1	6.1	6.1
USSR	--	--	4.5	4.5	--	--	--	--	4.5
UK	--	--	--	--	30.8	--	38.5	69.3	69.3
USA	170.4	803.8	33.1	1 007.3	7.3	24.8	1 086.7	1 118.8	2 126.1
Yugoslavia	--	--	--	--	--	--	8.7	8.7	8.7
Sub-total	347.5	1 430.2	597.7	2 375.4	55.8	24.8	1 883.7	1 964.3	4 339.7
Organizations:									
CNRET	--	--	--	--	--	--	3.9	3.9	3.9
IANEC	--	--	4.3	4.3	--	--	--	--	4.3
IEA	--	--	--	--	--	--	1.0	1.0	1.0
IFFIT	--	--	--	--	--	--	44.5	44.5	44.5
IIASA	--	--	--	--	--	--	0.6	0.6	0.6
UNDP	--	--	--	--	--	--	0.5	0.5	0.5
Sub-total	--	--	4.3	4.3	--	--	50.5	50.5	54.8
GRAND TOTAL	347.5	1 430.2	602.0	2 379.7	55.8	24.8	1 934.2	2 014.8	4 394.5

¹ Training includes costs for fellowships, scientific visits and training courses.

B. Assistance provided from funds made available by Member States to finance assistance for themselves

(in thousands of dollars)

Source of funds	Project	Assistance provided		
		Experts	Equipment	TOTAL
Brazil	Raw materials prospection BRA/3/005	41.4	–	41.4
Costa Rica	Nuclear medicine COS/6/007	–	50.0	50.0
Ecuador	Uranium prospection ECU/3/004	–	61.0	61.0
Israel	Nuclear medicine ISR/6/009	–	18.0	18.0
Madagascar	Nuclear raw materials prospection MAG/3/003	–	223.1	223.1
TOTAL		41.4	352.1	393.5

ANNEX II
SHORT-TERM TRAINING PROJECTS: 1979

Project title	Place and dates	Source of funds	Participation ^a		
			(1)	(2)	(3)
Regional training course for nuclear laboratory technicians	San José, Costa Rica 8 January to 2 March	Regular programme	12	—	5
Interregional training course on electric system expansion	Argonne, Illinois, USA 8 January to 9 March	Regular programme	25	—	—
Workshop for Member States' Liaison Officers on IAEA technical assistance procedures	Vienna, Austria 29 January to 2 February	Regular programme	45	—	—
Interregional training course on the application of nuclear techniques in studies of the pathogenesis and immunology of parasitic diseases in domestic livestock	Nairobi, Kenya 26 February to 30 March	SIDA	12	—	4
Regional training course on radioimmunoassay and related procedures	Peradeniya, Sri Lanka 11 March to 7 April	UNDP	20	—	7
Interregional training course on the use of radioimmunoassay and related techniques in animal disease and production research	Havana, Cuba 23 April to 18 May	SIDA	16	—	8
Interregional training course on the use of isotope and radiation techniques in studies of soil-plant relationships	Seibersdorf, Austria 23 April to 8 June	SIDA	22	—	—
Interregional training course on the role of nuclear energy within a national energy plan	Saclay, France 14 May to 29 June	Regular programme	30	1	1
Interregional training course on the use of nitrogen-15 in soil science and plant nutrition studies	Leipzig, German Democratic Republic 21 May to 22 June	Regular programme	19	—	—
Interregional training course on the use of radioactive and stable nuclides in animal science and veterinary medicine	Fort Collins, Colorado, USA 21 May to 30 June	Regular programme	17	—	—
Study tour on nuclear techniques and induced mutations in plant genetics and breeding	Czechoslovakia, Poland, German Democratic Republic 16 June to 7 July	Regular programme	20	—	—
Interregional training course on nuclear electronics	Dublin, Ireland 18 June to 14 September	Regular programme and Government of Ireland	18	—	—
Interregional training course on the use of isotopes and radiation in integrated pest management with special reference to the sterile-insect technique	Gainesville, Florida, USA 3 July to 24 August	Regular programme	19	—	—
Interregional training course and study tour on nuclear techniques in medicine	Moscow, USSR 1 September to 3 December	Regular programme	28	—	—
Interregional training course on nuclear power project construction and operation management	Karlsruhe, Federal Republic of Germany 3 September to 15 November	Regular programme	27	2	—
Interregional training course on food irradiation	Wageningen, Netherlands 4 September to 12 October	IFIT	15	—	—
Interregional training course on siting for nuclear power plants	Argonne, Illinois, USA 5 September to 2 November	Regular programme	35	1	—
Regional training course on the use of induced mutations in plant breeding	Bogor, Indonesia 8 October to 16 November	SIDA	17	—	11
Interregional training course on quality assurance	Madrid, Spain 29 October to 30 November	Regular programme	23	—	6

Project title	Place and dates	Source of funds	Participation ^a		
			(1)	(2)	(3)
Interregional training course on the use of research reactors	Budapest, Hungary 5 November to 7 December	Regular programme	18	–	–
Interregional training course on safety and reliability in nuclear plant operation	Argonne, Illinois, USA 5 November to 14 December	Regular programme	27	2	–
Study tour on nuclear power development	Czechoslovakia, German Democratic Republic, USSR 12 November to 2 December	Regular programme	23	–	–
Interregional training course on safety analysis review	Karlsruhe, Federal Republic of Germany 19 November to 20 December	Regular programme	29	1	–
International training course on physical protection of nuclear facilities and materials	Albuquerque, New Mexico, USA 28 November to 18 December	Government of the USA	12	9	–

^a The figures under (1) denote the number of award holders whose cost of participation was met out of project funds; those under (2) denote the number of participants who attended at the expense of the Government, another organization or programme; and those under (3) denote the number of local participants. No stipends or international travel costs are payable out of project funds in respect of participants shown under (2) and (3).

ANNEX III

FORMAL REPORTS SUBMITTED TO RECIPIENT COUNTRY GOVERNMENTS^a

A. Experts' final reports

Reference number	Name of expert	Subject	Country of assignment
1427	Kump, P.	X-ray fluorescence	Costa Rica
1428	Osborn, S.B.	Dosimetry	Israel
1430	Gopinatha, R.	Quality assurance related to safety of nuclear power plants	Egypt
1432	Wallin, M.	Radiation protection	Sri Lanka
1433	Gomez-Alonso, M.	Reactor operation ^b	Chile
1435	Hoppner, G.	Power reactor accident analysis	Brazil
1437	Fitz, L.	Nuclear power safety	Turkey
1438	Llorente, A.	Fuel management	Turkey
1439	Rojas, J.L.	Fuel management	Turkey
1440	Schuch, N.J.H.	Nuclear power safety	Turkey
1441	Noviello, L.	Nuclear power safety	Turkey
1442	Truong, B.	In situ studies on root development in rain-fed rice using phosphorus-32 ^c	Ivory Coast
1443	Tupy, J.	Physiology of hevea productivity ^c	Ivory Coast
1444	Van Zijl, N.	Bid specification and evaluation	Turkey
1445	Broadbent, F.E.	Radioisotopes in agriculture	Bolivia
1446	Caillot, A.	Radioisotopes in hydrology	Brazil
1447	Lemarchand-Beraud, T.	Radioimmunoassay	Bolivia
1448	Manchanda, A.	Pesticide residues	Sudan
1449	Dolnicar, J.	Nuclear science laboratory	Sudan
1450	Hamissa, M.R.	Application of radioisotopes in agriculture ^c	Morocco
1452	Goodwin, A.	Radiation protection	Brazil
1453	Goel, P.S.	Use of radioisotopes in hydrology	Sri Lanka
1454	Mikaelsen, K.	Use of radioisotopes in agriculture	Peru
1455	Kosowicz, J.	Nuclear medicine	Brazil
1459	Ruhm, M.E.	Mediterranean fruit fly control	Mexico
1460	Haq, M.S.	Plant breeding	Venezuela
1463	Mikaelsen, K.	Applications of nuclear techniques in agriculture	Venezuela
1464	McEvily, J.A.	Fatigue in nuclear materials	Argentina
1465	Kulka, J.	Neutron inelastic scattering	Brazil
1466	Bucurescu, D.	Nuclear physics	Greece
1467	Veya, R.	Nuclear power safety	Turkey
1468	Chaugule, R.S. Vijayaraghavan, R.	Applied nuclear physics	Indonesia
1470	Vidmar, M.	Radiation protection	U.R. Tanzania
1472	Barrada, Y.	Use of radioisotopes in agriculture	Mauritius
1473	Rennie, D.A.	Use of radioisotopes in agriculture	Thailand
1475	Roggenbauer, H.	Nuclear power safety	Turkey
1476	Wright, H.A.	Safety mission for the Laguna Verde nuclear power plant	Mexico
1477	Wahlstrom, B.	Nuclear engineering training	Pakistan
1478	Hammond, S.B. Ha-Vinh, P. Rosen, M. Csik, B.	Nuclear power progress mission	Malaysia
1479	Matijevic, E.	Chemistry of reactor systems	Argentina
1480	Marttila, O.J.	Nuclear physics	U.R. Tanzania
1481	McCulloch, J.S.G.	Use of radioisotopes in hydrology	Hong Kong
1482	Rahman, I.A.	Radioisotopes in medicine	Zambia
1483	Obst, J.M.	Use of radioisotopes in animal science	Philippines
1484	Lawson, R.C.	Neutron dosimetry and standardization	Israel
1485	Münze, R.	Radiopharmaceuticals	Egypt
1486	Johansson, L.J.	Use of radioisotopes in medicine	Ethiopia
1488	Katsanos, A.	Trace elements analysis	Bangladesh
1489	Doederlein, J.M.	Nuclear power safety	Turkey
1490	Karttunen, E.I.	Activation analysis	Albania
1491	Hellborg, I.R.	Nuclear physics	Romania
1492	Northwood, D.	Electron microscopy	Argentina
1493	Kuoppomäki, R.	Nuclear techniques in industry	Poland
1494	Roper, D.A.	Out-of-core fuel management	Brazil

Reference number	Name of expert	Subject	Country of assignment
1495	Crespi, M.B.A.	Nuclear science education	Ecuador
1496	Farges, L. Ahmed, J.U.	Radiological protection in the processing and handling of radioactive ores ^c	Niger
1497	Mühling, G.	Reactor fuel elements	Mexico
1498	Hofmann, P.	Behaviour of fuel elements	Argentina
1499	Ondracek, G.	Quantitative metallurgy	Argentina
1500	Farny, G.	Laboratory design	Bangladesh
1501	Thiele, R.	Nuclear analytical techniques ^c	U.R. Cameroon
1502	Dolnicar, J.	Nuclear centre planning	Bolivia
1504	Dézi, Z. Haider, J.G.	Radiotherapy physics	Afghanistan
1505	Whitt, K.M.	Nuclear power plant safety analysis	Brazil
1507	Ayalon, D.	Radioimmunoassay	Costa Rica
1508	Zech, H.J.	Fuel management	Brazil
1509	Tys, J.	Upgrading of X-ray analytical methods ^c	Morocco
1511	England, B.G.	Radioimmunoassay	Ecuador
1512	Calkins, C. Bolter, E.F.	Mediterranean fruit fly control	Mexico
1513	Wright, H.A.	Safety mission for Laguna Verde nuclear power plant	Mexico
1514	Hammer, J.	Nuclear training centre	Turkey
1515	Gonfiantini, R.	Isotopes in hydrology	Colombia
1516	Nappo, C.J.	Nuclear power safety	Turkey
1517	Rodríguez, E.J.	Uranium prospecting ^b	Bolivia
1518	Holleck, H.	Thermodynamics of nuclear materials	Argentina
1519	Vormum, G.K.	Radioisotope production	Brazil
1520	Ranjhan, S.K.	Use of radioisotopes in animal science	Bangladesh
1521	Rockley, J.C.	Industrial radiography	Ecuador
1522	Haase, G.H.	Mass spectrometric isotope analysis	Iraq
1523	Matzke, H.	Irradiation damage and defect development in oxides	Argentina
1524	Melches, C.	Fuel management	Turkey
1525	Parker, H.E.	Waste management	Poland
1526	Kelley, M.T.	Computer programming/spectroscopy	Greece
1527	Jablonski, F.J.	Nuclear power plant safety analysis	Brazil
1528	Lapidot, M.	Food preservation	Portugal
1529	Hehn, G.	Neutron and gamma studies on shielding materials	Egypt
1530	Belcher, E.H.	Nuclear medicine	Peru
1533	Kulka, J.	Materials testing	Indonesia
1534	Drexler, G.	Secondary standard dosimetry laboratory (SSDL)	Sudan
1535	Matolin, M.	Aerial gamma spectrometric prospecting ^c	Morocco
1536	Frazier, P.E.	Variable energy cyclotron	India
1537	Schöllhammer, H.	Radiation damage	Pakistan
1538	Lane, J. Nuguid, C.P.	Nuclear power planning	Malaysia
1539	Ortín, N.	Food preservation ^b	Panama
1541	Tauchid, M.	Uranium geochemical prospecting	Philippines
1542	Kump, P.	Nuclear science	Jordan
1543	Rozenberg, J.	Physical chemistry of purification processes	Argentina
1544	Kanter, M.	Training course on safety analysis review	Egypt
1545	Dolnicar, J.	Feasibility of establishing neutron generator laboratory	Zambia
1546	Dray, M.	Isotopes in hydrology	Cyprus
1548	Ruden, B.I. Panzer, W.	SSDLs (Interregional project)	Bolivia
1549	Ruden, B.I. Panzer, W.	SSDLs (Interregional project)	Brazil
1550	Ruden, B.I. Panzer, W.	SSDLs (Interregional project)	Mexico
1551	Vidmar, M.	Radiation protection	Zambia
1552	Ruden, B.I. Panzer, W.	SSDLs (Interregional project)	Venezuela
1553	Oppelt, A.R.	Radioisotopes in medicine: Pulmonary studies with radioisotopes	Philippines
1554	Browne, E.J.	Establishment of a SSDL	Philippines
1555	Sudarsan, P.	Food irradiation	Bangladesh
1556	Lemarchand-Beraud, T. García, E.J. Fiori, A.M.	Radioimmunoassay	Paraguay

Reference number	Name of expert	Subject	Country of assignment
1557	Bars, B.	Research reactor modernization	Yugoslavia
1558	Warnick, C.	Nuclear power plant safety analysis	Brazil
1559	Ruhm, M.E.	Mediterranean fruit fly control ^b	Mexico
1560	Erjavce, M.	Use of radioisotopes in medicine	Burma

B. Terminal reports on projects assisted by UNDP^d

Recipient country	Project title	Project Manager/ Chief Technical Adviser
Hungary	Use of ionizing radiation for the sterilization of medical supplies	H.C. Yuan

C. Technical reports emanating from UNDP- or SIDA-assisted projects^d

Recipient country	Project title	Report title	Technical report number
Bangladesh	Development of the Institute of Nuclear Agriculture	Status report	4
		Report of a consultancy mission	5
		Report of a consultancy mission	6
		Report of a consultancy mission	7
		Report of a consultancy mission	8
Colombia	Prospection for radioactive minerals	Aerial survey monitoring	2
		Organization of analytical facilities	3
India	Strengthening of nuclear research in agriculture	Status report of the General Consultant	1

D. Reports emanating from UNDP-assisted intercountry projects

Region	Project title	Participating agencies
Asia and the Pacific	Seminar on the application of nuclear techniques in agriculture	FAO and IAEA

^a The reports are available in English unless otherwise indicated. No data have been included in respect of reports whose distribution is restricted to the recipient Government or when no notification has been received that reports submitted in connection with UNDP-financed assistance have been de-restricted.

^b Available in Spanish only.

^c Available in French only.

^d In 1979, 40 technical/terminal reports were submitted to Governments; only nine of them had been de-restricted when this report was compiled.

ANNEX IV
VOLUNTARY CONTRIBUTIONS AND COST-FREE FELLOWSHIPS FOR THE
1979 REGULAR PROGRAMME

1. As requested by the Technical Assistance Committee of the Board of Governors, information is given in Table A below in respect of the pledges of voluntary contributions of Member States to the General Fund for 1979.

Table A
Voluntary contributions pledged and paid to the General Fund for 1979
as at 31 December 1979

Member State	1979 Base rate %	Share of \$8.5 million target for voluntary contributions for 1979 using the base rate ^a	Pledged \$	Paid \$
(1)	(2)	(3)	(4)	(5)
Afghanistan	0.01	850	850	850
Albania	0.01	850	850	—
Algeria	0.11	9 350	—	—
Argentina	0.90	76 500	76 500	40 500
Australia	1.65	140 250	140 250	140 250
Austria	0.68	57 800	57 800	57 800
Bangladesh	0.04	3 400	—	—
Belgium	1.15	97 750	108 912	—
Bolivia	0.01	850	—	—
Brazil	1.11	94 350	94 350	94 350
Bulgaria	0.15	12 750	12 750	12 750
Burma	0.01	850	—	—
Byelorussian Soviet Socialist Republic	0.44	37 400	30 303	30 303
Canada	3.25	276 250	276 250	276 250
Chile	0.10	8 500	9 000	9 000
Colombia	0.12	10 200	—	—
Costa Rica	0.02	1 700	—	—
Cuba	0.12	10 200	10 200	—
Cyprus	0.01	850	—	—
Czechoslovakia	0.90	76 500	28 463	28 463
Dem. Kampuchea	0.01	850	—	—
Democratic People's Republic of Korea	0.05	4 250	4 250	4 250
Denmark	0.68	57 800	57 800	57 800
Dominican Republic	0.02	1 700	—	—
Ecuador	0.02	1 700	1 700	1 700
Egypt	0.09	7 650	7 143	—
El Salvador	0.01	850	—	—
Ethiopia	0.01	850	—	—
Finland	0.47	39 950	39 950	39 950
France	6.22	528 700	300 000	300 000
Gabon	0.01	850	—	—
German Democratic Republic	1.42	120 700	131 579	131 579
Germany, Federal Republic of	8.23	699 550	699 550	699 550
Ghana	0.02	1 700	1 818	—
Greece	0.37	31 450	31 450	31 450
Guatemala	0.02	1 700	—	—
Haiti	0.01	850	—	—
Holy See	0.01	850	—	—
Hungary	0.35	29 750	56 275	56 275
Iceland	0.02	1 700	—	—
India	0.73	62 050	63 000	63 000
Indonesia	0.15	12 750	12 750	12 750
Iran	0.43	36 550	—	—
Iraq	0.09	7 650	7 650	7 650
Ireland	0.16	13 600	13 600	13 600

Member State	1979 Base rate %	Share of \$8.5 million target for voluntary contributions for 1979 using the base rate ^a	Pledged \$	Paid \$
(1)	(2)	(3)	(4)	(5)
Israel	0.25	21 250	18 200	18 200
Italy	3.61	306 850	319 018	—
Ivory Coast	0.02	1 700	—	—
Jamaica	0.02	1 700	—	—
Japan	9.23	784 550	784 550	696 485
Jordan	0.01	850	—	—
Kenya	0.01	850	—	—
Korea, Republic of	0.14	11 900	11 900	11 900
Kuwait	0.16	13 600	—	—
Lebanon	0.03	2 550	—	—
Liberia	0.01	850	—	—
Libyan Arab Jamahiriya	0.17	14 450	14 450	—
Liechtenstein	0.01	850	850	850
Luxembourg	0.04	3 400	—	—
Madagascar	0.01	850	—	—
Malaysia	0.10	8 500	8 500	—
Mali	0.01	850	—	—
Mauritius	0.01	850	—	—
Mexico	0.84	71 400	71 400	71 400
Monaco	0.01	850	850	850
Mongolia	0.01	850	850	850
Morocco	0.05	4 250	4 250	4 250
Netherlands	1.52	129 200	129 200	129 200
New Zealand	0.28	23 800	—	—
Nicaragua	0.01	850	850	—
Niger	0.01	850	850	850
Nigeria	0.14	11 900	—	—
Norway	0.48	40 800	40 800	40 800
Pakistan	0.07	5 950	5 100	5 100
Panama	0.02	1 700	1 700	300
Paraguay	0.01	850	—	—
Peru	0.06	5 100	—	—
Philippines	0.11	9 350	9 500	—
Poland	1.48	125 800	75 301	75 301
Portugal	0.20	17 000	17 000	17 000
Qatar	0.02	1 700	1 700	1 700
Romania	0.26	22 100	22 100	9 945
Saudi Arabia	0.25	21 250	70 000	70 000
Senegal	0.01	850	850	—
Sierra Leone	0.01	850	—	—
Singapore	0.09	7 650	1 800	1 800
South Africa	0.45	38 250	30 100	30 100
Spain	1.63	138 550	30 000	30 000
Sri Lanka	0.02	1 700	1 700	—
Sudan	0.01	850	2 500	—
Sweden	1.32	112 200	112 200	112 200
Switzerland	1.03	87 550	87 550	87 550
Syrian Arab Republic	0.02	1 700	—	—
Thailand	0.11	9 350	9 350	9 350
Tunisia	0.02	1 700	—	—
Turkey	0.32	27 200	27 200	26 385
Uganda	0.01	850	—	—
Ukrainian Soviet Socialist Republic	1.63	138 550	121 212	121 212
Union of Soviet Socialist Republics	12.39	1 053 150	1 136 364	1 136 364
United Arab Emirates	0.07	5 950	5 950	5 950

Member State	1979 Base rate %	Share of \$8.5 million target for voluntary contributions for 1979 using the base rate ^a	Pledged \$	Paid \$
(1)	(2)	(3)	(4)	(5)
United Kingdom of Great Britain and Northern Ireland	4.83	410 550	410 550	391 559
United Republic of Cameroon	0.01	850	—	—
United Republic of Tanzania	0.01	850	850	—
United States of America	25.00	2 125 000	2 125 000	2 125 000
Uruguay	0.04	3 400	3 400	—
Venezuela	0.42	35 700	30 100	30 100
Viet Nam	0.03	2 550	—	—
Yugoslavia	0.42	35 700	35 700	35 700
Zaire	0.02	1 700	1 700	1 700
Zambia	0.02	1 700	1 700	—
TOTAL	100.00	8 500 000	8 059 688	7 410 021

^a As recommended in General Conference resolutions GC(V)/RES/100 and GC(XV)/RES/286.

2. The value of Type II fellowships provided through the Agency in 1979 is included under "Training" in Annex I.A. Some of the awards reflected in the statistics in Annex I.A were made prior to 1979.

3. A list of fellowships made available to the Agency cost free for 1979 is given in Table B; some of the Type II fellowships awarded were carried over from previous years. (Table B does not include the man-months represented by Type II fellowship extensions of less than six months each that were approved in 1979 in respect of awards originally made under the fellowship programme for 1978 or a previous year.)

Table B
Cost-free fellowships offered or awarded

Donor	Number of fellowships			
	(1)	(2)	(3)	(4)
I. MEMBER STATES				
Argentina	5	60	1	6
Austria	—	17	1	9
Belgium	6	36	3	31
Brazil	10	120	10	50
Bulgaria	2	12	—	—
Chile	—	20	—	—
Czechoslovakia	9	—	5	60
Denmark	5	60	3	25
France	—	100	9	61
Germany, Federal Republic of	—	100	7	66
Hungary	4	—	4	30
India	10	—	5	35
Israel	—	45	—	—
Italy	25	200	17	150
Japan	10	90	8	71
Mexico	2	—	1	6
Netherlands	8	—	8	70
Pakistan	6	—	—	—
Philippines	3	—	—	—
Poland	10	—	4	23
Romania	10	100	1	12
Spain	5	60	3	30
Thailand	2	—	—	—
United Kingdom	a	—	5	58
United States of America	a	—	118	1 164
Yugoslavia	—	22	2	16
II. REGIONAL ORGANIZATIONS				
JINR/Dubna	3	36	—	—

(1) Number of awards offered.

(2) Number of man-months offered.

(3) Number of awards less rejections and withdrawals.

(4) Total number of man-months awarded.

^a Awards made on the basis of available funds.

ANNEX V

PROJECTS UNDER IMPLEMENTATION FOR UNDP
(in thousands of dollars)

Project code number and title	Amount approved	Approved budgets				
		Prior to 1979	1979 ^d	1980	1981	1982
<u>Argentina</u>						
ARG/71/537	National Centre for Non-destructive Testing and Quality Control	993	825	168		
ARG/78/020	Nuclear engineering	1264		349	438	477
<u>Bangladesh</u>						
BGD/77/008	Exploration for uranium and thorium	68	36	32		
<u>Brazil</u>						
BRA/76/003	Nuclear manpower qualification and training	2233	691	1119	236	154
BRA/78/006	Development of agriculture through the application of nuclear technology – Phase II	492		140	153	199
BRA/79/004	Nitrogen fixation workshop	25		25		
<u>Bulgaria</u>						
BUL/77/013	Development of a centre for the application of isotopes	450	43	152	136	119
BUL/79/003	Radiation chemistry	4		4		
<u>Chad</u>						
CHD/79/001	Prospection for nuclear materials	287		182	105	
<u>Chile</u>						
CHI/74/005	Uranium prospection	1154	986	168		
CHI/76/008	Nuclear power plant	1448	446	534	468	
CHI/79/001	Uranium prospection – Phase II	525		134	315	76
<u>Colombia</u>						
COL/76/031	Prospection for radioactive minerals	914	97	628	189	
<u>Cuba</u>						
CUB/77/001	Introduction of nuclear techniques into the national economy	2033	20	507	778	510
						218
<u>Egypt</u>						
EGY/73/037	National Centre for Radiation Technology	636	529	70	37	
EGY/78/011	National Centre for Radiation Technology – Phase II	601		45	447	109
<u>Ethiopia</u>						
ETH/78/005	Application of nuclear techniques	399	30	134	119	116
<u>Ghana</u>						
GHA/74/004	Training in the use of nuclear techniques	75	59	16		
<u>Greece</u>						
GRE/79/004	Exploration for uranium in Central and Eastern Macedonia and Thrace	201		31	111	59
<u>Hungary</u>						
HUN/71/509	Use of ionizing radiation for the sterilization of medical supplies	493	492	1		
<u>India</u>						
IND/75/035	Geochemical investigations for uranium, thorium and associated atomic minerals	295		260	35	
<u>Indonesia</u>						
INS/68/043	Application of radioisotopes in agriculture – mutation breeding	134	131	3		
INS/78/075	Radiation processing for industries	22	6	16		
<u>Madagascar</u>						
MAG/77/012	Uranium prospection and evaluation	1361		164	640	362
						195
<u>Morocco</u>						
MOR/73/019	Training and research in applied nuclear physics at the Faculty of Sciences, Rabat	696	608	34	54	

Project code number and title	Amount approved	Approved budgets				
		Prior to 1979	1979 ^a	1980	1981	1982
<u>Nigeria</u>						
NIR/72/005	Use of nuclear techniques in animal production	570	98	86	266	120
NIR/72/044	Insecticidal investigation for tsetse fly eradication	275	197	67	11	
<u>Niue</u>						
NIU/78/006	Mineral prospecting and water resources	20		14	6	
<u>Pakistan</u>						
PAK/72/014	Plant breeding using induced mutations	107	106	1		
PAK/74/002	Exploration for uranium in the Siwalik Sandstones	824	823	1		
<u>Peru</u>						
PER/76/002	Nuclear energy	2118	438	837	528	315
<u>Philippines</u>						
PHI/75/003	Training and consultancy in nuclear power plant safety analysis, engineering and public information	166	74	32	60	
<u>Romania</u>						
ROM/76/023	Development of nuclear technology – Phase II	653	65	385	131	72
<u>Sri Lanka</u>						
SRL/77/014	Radioactive tracer techniques for the study of coastal sedimentology	169	99	46	24	
<u>Sudan</u>						
SUD/74/018	Use of isotopes in studies on adaptation nutrition and the health of domestic animals	89	87	2		
<u>Syrian Arab Republic</u>						
SYR/72/018	Use of isotopes in agriculture – efficiency in water and fertilizer use	87	78	9		
SYR/72/019	Use of radioisotopes in animal science	60	27	33		
<u>Turkey</u>						
TUR/72/036	Exploration for uranium in South West Anatolia	768	767	1		
TUR/74/053	Utilization of isotopes in hydrology	107	96	11		
<u>Yugoslavia</u>						
YUG/74/025	Radiation unit for the industrial application of ionizing radiation	434	429	5		
YUG/78/007	Industrial application of high-energy ionizing radiation	160		7	121	32
YUG/78/008	Establishment of uranium analysis laboratory at Zirovski Vrh Mine, Slovenia	80			67	13
<u>Zaire</u>						
ZAI/76/004	Strengthening of infrastructure – Centre régional d'études nucléaires – Regional Centre for Nuclear Studies (CREN), Kinshasa	701		91	348	262
<u>Asia and the Pacific</u>						
RAS/78/049	Training course on radioimmunoassay and related procedures	50		50		
RAS/79/061	Support for regional co-operation in the industrial application of isotopes and radiation technology	15		15		

^a The carry-over of the unimplemented provisions into 1980 and future years has been requested.

ANNEX VI

REGULAR PROGRAMME PROJECTS COMPLETED OR
CANCELLED DURING 1979A. Completed projects

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Albania	Activation analysis ALB/2/003	1976 1977	3	59 000
Argentina	Nuclear physics ARG/1/018	1977	3	
	Fuel element technology ARG/4/046	1975	5	
	Nuclear materials ARG/4/047	1975	7	
	Nuclear metallurgy ARG/4/056	1976	0.5	29 000
	Chemistry of reactor systems ARG/4/063	1978	0.5	
	Radiation protection dosimetry ARG/9/004	1975	0.5	
Bangladesh	Laboratory design BGD/0/002	1977	0.5	
	Trace element analysis BGD/2/004	1977	3	26 000
	Nuclear electronics laboratory BGD/4/004	1979	0.5	
	Radioisotopes in hydrology BGD/8/002	1978	1	7 000
Bolivia	Overall programming BOL/0/002	1979	0.5	
	Uranium prospection BOL/3/007	1978	6	27 000
Brazil	Waste management BRA/0/006	1977	11	
	Out-of-core fuel management BRA/0/007	1977	4	
	Environmental control BRA/9/007	1974	3	
	Power reactor safety BRA/9/009	1976	11.5	
	Radiation protection BRA/9/011	1977	3	
	Radiological protection BRA/9/014	1978	5	
Bulgaria	Radioisotopes in industry BUL/8/006	1977		28 000
	Reactor safety BUL/9/004	1977		27 000
Chile	Reactor operation CHI/4/006	1978	1	
	Isotopes in industry CHI/8/010	1979		6 000
	Reactor siting CHI/9/006	1977	1	

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Colombia	Overall programming COL/0/002	1979	0.5	
	Uranium prospecton COL/3/005	1978	4.5	34 000
Costa Rica	Nuclear physics COS/1/003	1974	5	30 000
	Nuclear programming in agriculture COS/5/005	1978	0.5	
Cuba	Activation analysis CUB/2/002	1973, 1974, 1975		202 000
Cyprus	Dosimetry CYP/1/002	1979		12 000
Ecuador	Gamma spectrometry ECU/2/005	1976		15 000
	Uranium prospecton ECU/3/003	1976	15	31 000
	Dosimetry laboratory LCU/6/006	1979	1	22 000
	Industrial radiography LCU/8/004	1978	3	7 000
Egypt	Neutron scattering EGY/1/011	1976 1977		182 000
	Radiopharmaceuticals EGY/6/002	1978	3	29 000
	Reactor safety EGY/9/008	1977	4	
Ethiopia	Radioisotopes in medicine LTH/6/002	1979	0.5	
Ghana	Nuclear techniques GHA/4/006	1979		22 000
Greece	Labelled compounds GRI/2/012	1978		37 000
	Isotopes in agriculture GRI/5/010	1979	1	20 000
Guatemala	Overall programming GUA/0/005	1979	1	
Hong Kong	Radioisotopes in hydrology (soils) HOK/5/002	1978	1	6 000
Hungary	Neutron generator HUN/1/005	1978		58 000
India	Variable-energy cyclotron IND/4/010	1979	2	
	Environmental monitoring IND/9/006	1979		25 000
Indonesia	Isotopes in agriculture INS/5/014	1978		15 000
Iraq	Spectrometry IRQ/1/009	1978	6	
	Reactor technology IRQ/4/004	1972, 1973, 1974, 1975, 1977		532 000
Israel	Activation analysis ISR/2/009	1976		11 000
	Nuclear medicine ISR/6/009	1979		61 000

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Ivory Coast	Plant breeding IVC/5/008	1978	4	
Kenya	Radiation protection KEN/9/002	1978	3	
Kuwait	Nuclear power KUW/0/002	1976 1979	1	
Madagascar	Nuclear physics MAG/1/003	1979		76 000
Malaysia	Isotopes in agriculture MAL/5/003	1976 1979	24.5	
Mauritius	Radioisotopes in agriculture MAR/5/002	1979	0.5	5 000
Mali	Isotopes in animal science MLI/5/003	1975, 1976, 1977, 1978	49	72 000
Mexico	Fuel element fabrication MEX/4/023	1975	3	
	Mediterranean fruit fly control MEX/5/007	1977 1978	3	41 000
Morocco	Isotopes in agriculture MOR/5/011	1977	10.5	1 000
	Isotopes in agriculture MOR/5/012	1978		20 000
Niger	Radiological protection NER/9/002	1978	1	
Pakistan	Radiation damage PAK/1/018	1976 1977	2	121 000
	Nuclear engineering training PAK/4/015	1977	2.5	88 000
	Gamma radiography PAK/4/019	1979		16 000
Panama	Food preservation PAN/5/002	1978	1	
Paraguay	Uranium prospection PAR/3/002	1977	6	24 000
Peru	Labelled compounds PIR/2/009	1979		23 000
	Nuclear medicine PER/6/002	1977	13	3 000
	Radioisotopes in medicine PIR/6/003	1978		30 000
	Health physics PIR/9/006	1973	12	
Philippines	Establishment of a secondary standards dosimetry laboratory PHI/0/002	1976	15	41 000
	Electron paramagnetic resonance spectroscopy PHI/1/011	1976		29 000
	Nuclear power plant safety PHI/9/005	1977	6	
Poland	Nuclear techniques in industry POL/8/003	1978	1	32 000
Portugal	Nuclear energy planning POR/0/002	1977	1.5	
	Neutron activation analysis POR/2/005	1978		64 000

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Romania	Radiation detectors ROM/4/007	1976		232 000
	Radioisotopes in agriculture ROM/5/003	1978		39 000
Senegal	Overall programming SEN/0/002	1979	1.5	
	Nuclear medicine SEN/6/006	1976, 1977	6.5	52 000
Singapore	Radiation protection SIN/9/007	1977		57 000
Sri Lanka	Radioisotopes in medicine SRL/6/008	1977		32 000
Sudan	Nuclear science laboratory SUD/0/004	1979	0.5	
	Pesticide residues SUD/5/011	1978	3	
	Nuclear medicine SUD/6/008	1979		61 000
Turkey	Fuel management TUR/4/014	1976	2.5	
	Nuclear power training TUR/4/016	1977	1	
	Reactor safety analysis TUR/9/003	1977	3	
Uganda	Raw materials prospection UGA/3/002	1977	16	30 000
	Chemical residues UGA/5/008	1978 1979		52 000
U.R. Cameroon	Nuclear physics CMR/0/002	1978	3	22 000
U.R. Tanzania	Nuclear physics URT/1/002	1977 1978	6	36 000
Uruguay	Nuclear research centre URU/0/002	1977		26 000
	Uranium prospection URU/3/004	1977	1	19 000
	Uranium exploration URU/3/005	1978	1.5	24 000
	Uranium prospection URU/3/006	1979	1	19 000
	Dosimetry and calibration URU/6/007	1978	3	11 000
Viet Nam	Radiation dosimetry VIE/1/002	1974		4 000
	Food preservation VIE/5/007	1971 1972		30 000
	Isotopes in medicine VIE/6/007	1973	0.5	16 000
	Isotopes in medicine VIE/6/008	1974		9 000
	Personnel monitoring VIE/9/002	1972		4 000

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Yugoslavia	Nuclear materials YUG/4/012	1977		43 000
	Isotopes in industry YUG/8/007	1976		8 000
	Nuclear power plant thermal releases YUG/9/007	1977	2	27 000
Zaire	Computing facility ZAI/0/002	1979		27 000
	Radioisotopes in agriculture ZAI/5/005	1979		21 000
	Isotopes in medicine ZAI/6/002	1976	6	10 000
	Radioisotopes in hydrology ZAI/8/003	1978	0.5	
Regional	Radioisotopes in industry RAS/8/007	1978	22.5	

B. Cancelled projects

Member State	Project title and code	Year of approval	Assistance approved	
			Experts (man-months)	Equipment (\$)
Argentina	Nuclear structure ARG/1/019	1977	3	
	Fuel element fabrication ARG/4/069	1979	2	
Ecuador	Nuclear centre siting ECU/9/005	1978	2	
India	Materials research instruments IND/4/008	1977	3	
Iran	Nuclear power programming IRA/9/006	1978	36	
Korea, R.	Radioactive waste management ROK/9/012	1978	2	
Malaysia	Nuclear power adviser MAL/0/004	1976	7	
Mexico	Nuclear power economics MX:X/0/002	1975	3	
	Uranium ore leaching MX:X/3/016	1977	6	
	Industrial use of radiation MX:X/8/008	1977	2	
	Safety of reprocessing plants MX:X/9/017	1976	3	
Philippines	Environmental monitoring PHI/9/0C1	1975	1.5	

ANNEX VII

FOOTNOTE-a/ PROJECTS MADE OPERATIONAL DURING 1979

Recipient	Project title and code	Experts		Equipment	
		Man-months	Source ¹	US \$	Source ¹
Bangladesh	Chemical analysis ² BGD/2/005	--	--	30 000	USA
Bolivia	Radiopharmaceuticals BOL/6/010	3	ARG	20 000	ARG
	Radiation protection BOL/9/004	6	USA	25 000	USA
Costa Rica	Applied nuclear physics COS/1/005	--	--	20 000	USA
Greece	Isotopes in hydrology GRE/8/005	1	OF2	25 000	USA
	Environmental radioactivity GRE/9/009	--	--	25 000	USA
Guatemala	Nuclear planning and programming GUA/0/004	2	ARG	--	--
Indonesia	Reactor electronics INS/4/016	--	--	15 000	USA
	Radioisotopes in poultry nutrition INS/5/017	6	USA	19 000	USA
Jordan	Nuclear science JOR/1/002	--	--	20 000	USA
Korea, R.	Uranium ore separation ROK/3/003	--	--	40 000	USA
	Radioisotopes in animal nutrition ROK/5/017	3	USA	64 000	USA
Malaysia	Nuclear material prospection MAL/3/002	1	GFR	20 000	GFR
	Radioisotopes in agriculture MAL/5/006	7	CAN	15 000	USA
	Radioisotopes in microbiology MAL/7/002	6	USA	--	--
Mali	Nuclear raw materials MLI/3/003	3	OF2	8 000	USA
Mexico	Nuclear power plant electrical system design MEX/4/030	2	USA	--	--
	Welding and quality control ² MEX/8/010	4	FRA	--	--
Peru	Nuclear electronics PER/4/005	--	--	40 000	USA
	Nuclear medicine PER/6/004	6	CAN	30 000	CAN
Philippines	Food irradiation PHI/5/014	--	--	12 000	USA
	Radioisotopes in medicine PHI/6/009	--	--	28 500	USA
	Radioactive waste management PHI/9/009	--	--	20 000	USA
Sri Lanka	Radioisotopes in animal science SRL/5/013	3	OF2	55 000	USA

Recipient	Project title and code	Experts		Equipment	
		Man-months	Source ¹	US \$	Source ¹
Thailand	Nuclear raw materials prospection THA/3/003	6	USA	25 000	USA
	Radioisotopes in agriculture THA/5/022	—	—	40 500	USA
	Goitre and anemia prevention THA/8/008	2	USA	—	—
Turkey	Nuclear techniques in agriculture TUR/5/008	2	OF2	15 000	OF2
Uruguay	Nuclear research centre URU/0/004	—	—	75 000	USA
TOTAL		63		687 000	

¹ Explanation of abbreviations: ARG = Argentina, CAN = Canada, FRA = France, GFR = Federal Republic of Germany, OF2 = Operating Fund II, USA = United States of America.

² Project approved under the 1978 technical assistance programme; all others were approved under the 1979 technical assistance programme.

ANNEX VIII

CHANGES TO APPROVED PROJECTS

Recipient	Project title and code	Existing approval 1 January 1979		Projects changes in 1979		Remarks
		Experts (man-months/days)	Equipment (US \$)	Experts ¹ (man-months/days)	Equipment (US \$)	
Argentina	Fuel element technology ARG/4/046	6	—	(0/21)	—	
	Nuclear materials ARG/4/047	10	—	(3/7)	—	
	Nuclear metallurgy ARG/4/056	2	29 000	(1/9)	—	
	Radiation protection dosimetry ARG/9/004	3	—	(1/14)	—	
Bolivia	Radiochemical analysis BOL/2/007	3	20 000	(3)	10 500	
	Uranium prospection BOL/3/008	24	40 000	(3)	10 500	
Bulgaria	Nuclear technology in agriculture BUL/5/007	1	35 000	—	(5 000)	
	Reactor safety BUL/9/004	1	40 000	(1)	—	
Burma	Neutron physics/chemistry BUR/1/008	18	66 000	—	3 100	
Costa Rica	Isotopes in animal science COS/5/004	33	70 000	0/15	(1 750)	
Cuba	Food irradiation CUB/5/004	—	600 000	—	1 000 + 200 000 ²	NCC ³
	Borehole logging CUB/8/003	3	43 700	—	6 200	NCC
	Industrial applications CUB/8/006	—	70 000	—	35 000	NCC
Cyprus	Dosimetry CYP/1/002	—	10 000	—	2 000	
Czechoslovakia	Food irradiation facility CZE/4/002	—	750 000	—	1 000 + 150 000 ²	NCC
Dem P.R. Korea	Neutron activation analysis DRK/1/002	3	139 000	—	(4 000)	
	Environmental protection DRK/7/002	1	58 000	—	4 000	
Ecuador	Nuclear science education ECU/0/002	18	20 265	2	—	
	Uranium prospection ECU/3/004	3	5 000	—	6 000	
	Radioimmunoassay ECU/6/004	4	30 000	—	6 000	
Egypt	Reactor engineering EGY/4/014	6	25 000	(1)	3 500	
	Radiopharmaceuticals EGY/6/002	3	30 000	—	7 000	
	Non-destructive testing EGY/8/005	1	25 000	—	2 500	NCC

Recipient	Project title and code	Existing approval 1 January 1979		Project changes in 1979		Remarks
		Experts (man-months/days)	Equipment (US \$)	Experts ¹ (man-months/days)	Equipment (US \$)	
Ghana	Radioisotopes in medicine GHA/6/006	6	10 000	—	3 000	
Greece	Isotopes in hydrology GRE/8/005	1	25 000	—	2 000	
	Reactor safety GRE/9/008	10/5	—	(1)	—	
Guatemala	Nuclear medicine GUA/6/005	1	35 000	(1)	6 500	NCC
Hungary	Cyclotron laboratory HUN/4/004	—	1 300 000	—	77 000 ⁴	NCC
India	Radioisotopes in industry IND/8/009	—	15 000	—	(5 000)	
Indonesia	Mutation breeding INS/5/013	8	12 000	(0/23)	2 600	
Iraq	Radionuclide analysis IRQ/6/006	—	42 000	—	(14 000)	
Israel	Reactor safety studies ISR/4/009	3	40 000	(1)	3 500	
Kenya	Nuclear medicine KEN/6/002	6	50 000	6/15	(18 800)	
Korea, R.	Uranium ore separation ROK/3/003	—	—	—	(5 000)	
	Isotopes in agriculture ROK/5/013	5	18 000	2	—	
Madagascar	Nuclear physics MAG/1/003	6	40 000	—	42 000	NCC
Malaysia	Nuclear power planning MAL/0/005	7	—	7	—	
	Nuclear medicine services MAL/6/007	6	90 000	—	35 000	
Mali	Uranium analysis laboratory MLI/3/002	6	30 000	—	4 500	
	Isotopes in animal science MLI/5/003	48	69 000	1	2 900	
Mauritius	Radioisotopes in agriculture MAR/5/002	2	—	(1/15)	5 700	
Mexico	Fuel element fabrication MEX/4/023	6	—	(3)	—	
	Medfly control MEX/5/008	22	88 000	2	(7 600)	
	Power reactor safety MEX/9/018	24	—	12	—	
Mongolia	Radiation biophysics MON/7/002	—	86 000	—	6 000	NCC
Morocco	Raw materials analysis MOR/3/003	3	35 000	2	5 000	
	Nuclear raw materials MOR/3/005	30	54 000	(2)	4 000	

Recipient	Project title and code	Existing approval 1 January 1979		Project changes in 1979		Remarks
		Experts (man-months/days)	Equipment (US \$)	Experts ¹ (man-months/days)	Equipment (US \$)	
Nigeria	Radiation biology NIR/7/002	12	—	2	—	
Pakistan	Isotopes in agriculture (Peshawar) PAK/5/013	—	60 000	—	6 500	NCC
	Isotopes in hydrology PAK/8/004	1	5 000	—	1 800	
Peru	Radioisotopes in medicine PER/6/003	—	25 000	—	2 000	
	Health physics PER/9/006	12	1 500	—	(1 500)	
	Radiological protection PER/9/007	14	75 000	—	1 500	
Philippines	Soybean nitrogen fixation PHI/5/013	3	21 000	—	5 000	NCC
	Environmental radioactivity PHI/9/007	12	102 000	2	—	
Portugal	Uranium prospection POR/3/002	9/20	35 000	—	(5 000)	
	Nuclear power safety POR/9/002	12	15 000	(1)	2 500	
Senegal	Isotopes in agriculture SEN/5/011	11	97 000	—	2 500	
	Nuclear medicine SEN/6/006	12	54 000	(5/10)	—	
	Radioisotopes in medicine SEN/6/007	6	28 000	5/10	—	
Sri Lanka	Geochemical prospection SRL/3/003	12	24 000	(3)	25 500	
	Nuclear engineering training SRL/4/005	12	15 000	—	(15 000)	
	Radioisotopes in animal science SRL/5/013	—	—	—	5 000	
Sudan	Nuclear medicine SUD/6/008	—	55 000	—	7 000	NCC
Syria	Nuclear energy planning SYR/0/003	1	—	2	—	
Thailand	Secondary standards dosimetry laboratory THA/1/003	6/15	75 000	1/15	—	
	Isotopes in agriculture THA/5/019	5	48 500	(4)	14 600	
	Environmental radioactivity THA/9/005	3	52 000	1	—	
Tunisia	Radioisotopes in industry TUN/8/006	12	18 000	—	5 300	
Turkey	Nuclear training centre TUR/4/012	6	—	1	3 000	
	Fuel management TUR/4/014	4	—	(1)	—	
	Nuclear techniques in agriculture TUR/5/008	—	—	—	4 000	
	Reactor safety analysis TUR/9/003	7	—	(4)	—	

Recipient	Project title and code	Existing approval 1 January 1979		Project changes in 1979		Remarks
		Experts (man-months/days)	Equipment (US \$)	Experts ¹ (man-months/days)	Equipment (US \$)	
Uganda	Chemical residues UGA/5/008	3	50 000	(1)	2 100	
Uruguay	Nuclear research centre URU/0/002	—	23 000	—	4 000	
	Research reactor centre URU/0/003	12	—	—	5 250	
	Nuclear research centre URU/0/004	9	—	3	—	
	Uranium prospecting URU/3/004	1	15 500	—	4 000	
	Uranium exploration URU/3/005	3	22 000	(1/15)	—	
Viet Nam	Radiation dosimetry VIE/1/002	6	3 500	(6)	—	
	Food preservation VIE/5/007	6	32 000	(6)	—	
	Plant mutation breeding VIE/5/008	2	60 000	—	85 500 + 5 200	NCC
	Isotopes in medicine VIE/6/007	6	16 300	(5/15)	—	
	Isotopes in medicine VIE/6/008	3	9 400	(3)	—	
	Personnel monitoring VIE/9/002	3	3 500	(3)	—	
Yugoslavia	Reactor safety YUG/4/015	3	40 000	(1)	3 500	
	Radiation polymerization YUG/8/008	8	60 000	(2)	7 000	
Zaire	Radioisotopes in hydrology ZAI/8/003	1	5 000	(0/15)	(5 000)	
	Health physics ZAI/9/002	12	6 000	(7/24)	—	
Zambia	Nuclear physics ZAM/0/003	9	15 000	3	—	
	Neutron activation laboratory ZAM/1/002	1	—	(0/23)	2 000	
	Isotopes in medicine ZAM/6/003	29	39 500	(5)	7 600	
TOTAL		633/10	5 351 665	(32/16)	772 700	

¹ Numbers in parentheses denote reductions – for example: (0/21) = minus 21 man-days and (3/7) = minus three man-months and seven man-days.

² Project change against future-year components.

³ NCC denotes selected non-convertible currencies.

⁴ \$58 000 of project change against future year components.