

THE
AGENCY'S TECHNICAL
CO-OPERATION ACTIVITIES
IN 1981

Report by the Director General

GC(XXVI)/INF/206

Printed by the
International Atomic Energy Agency
in Austria - August 1982



INTERNATIONAL ATOMIC ENERGY AGENCY

P R E F A C E

Following its usual practice, the Board of Governors has requested the communication to the General Conference of the material it used in reviewing the Agency's technical co-operation activities in 1981; 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 Agency[1].

The three principal types of technical co-operation inputs provided by the Agency are expert services, equipment and fellowships. The main objectives of these inputs 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 technical co-operation inputs of the Agency have been delivered. 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
CEC	Commission of the European Communities
DANIDA	Danish International Development Agency
IAEA	International Atomic Energy Agency
IBRD	International Bank for Reconstruction and Development
IFSTD	Interim Fund for Science and Technology for Development
JINR	Joint Institute for Nuclear Research
NUSS	Nuclear Safety Standards programme of the IAEA
SIDA	Swedish International Development Authority
UN-DNRE	Division of Natural Resources and Energy, United Nations
UNDP	United Nations Development Programme
WASP	Wien Automatic System Planning package for power generation expansion analysis (a computerized model developed by the IAEA)
WHO	World Health Organization

Byelorussian SSR	Byelorussian Soviet Socialist Republic
Central African R.	Central African Republic
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

Note: All sums of money are expressed in US dollars.

PART I. I N T R O D U C T I O N

A. SUMMARY AND KEY POINTS

1. The problem experienced in utilizing various types of currency has been completely solved. The Agency is now fully programming all the resources available to it, and a surplus in non-convertible currencies no longer exists.

2. As expenditures against the Agency's Technical Assistance Fund during 1981 increased by 34% and unliquidated obligations by 40%, the total earmarkings reflecting the backlog of assistance still to be provided from this fund, which had been increasing from year to year, declined by the end of 1981.

3. Implementation rates against the Technical Assistance Fund rose from 65.2% in 1980 to 71.6% in 1981.

4. Total resources for technical co-operation activities rose by 15.3%. Bleak prospects for greater UNDP assistance and very slow increases in assistance in kind suggest that, in the next few years, real growth will depend on voluntary contributions to the Technical Assistance Fund and on extrabudgetary resources.

5. Notwithstanding the pronounced increase in the delivery of technical assistance financed from the Technical Assistance Fund, total expenditures overall rose by only 11.3%, due mainly to lower expenditures in respect of UNDP projects. As the major increase in extrabudgetary resources came in the latter part of the year, this has not yet resulted in a corresponding increase in expenditures for 1981.

6. The downward trend in the actual number of expert man-months delivered has been arrested; implementation increased from 806 man-months in 1980 to 851 man-months in 1981.

7. A very welcome increase in extrabudgetary resources (35.4%) made it possible to declare 76.3% of all footnote-a/ projects in the 1981 programme operational and to increase the percentage of footnote-a/ projects made operational from the 1980 programme from 57% to 63%. While the assistance delivered

is fully integrated at the recipient level, the Secretariat now administers 20 separate funds of which 14 are extrabudgetary with individual donors.

8. Training continues to represent roughly one third of the Agency's technical co-operation activities. As training depends to a great extent on assistance in kind, the low growth rate for resources of this type gives reason for some concern, as does the difficulty experienced in finding host institutions willing to accept Agency fellows for on-the-job training, especially in nuclear-power-related fields.

9. The computerization of data for all Regular and Special Programme projects has been completed successfully and the system has become an indispensable tool in the day-to-day monitoring of these projects. Major efforts are still needed, however, to integrate the Fellowship, Training Course and UNDP Programmes into this system.

10. The Agency's first post-project evaluation results were published in document GOV/INF/400. Discussions of this paper in the February 1982 meetings of the Board of Governors provided valuable guidance to the Secretariat in formulating concrete proposals for future evaluation efforts.

11. While the 1982 programme was based on overprogramming by 10% of the resources anticipated for that year, increases in miscellaneous income and savings in the on-going programme during 1981 reduced the amount of overprogramming to only 2.1% of the programmable 1982 resources by the beginning of 1982.

12. Multi-year project commitments for future years, which, like overprogramming, constitute a claim on future resources, rose from \$3 060 400 at the start of 1981 to \$8 325 900 at the start of 1982. Of this amount, which is for all future years, \$4 814 000 referred to 1983. The increase is a welcome development in view of the significance of multi-year projects for proper planning and impact at the recipient-country level. Nevertheless, restraint will be exercised to ensure that commitments against a future year in no case exceed 50% of the anticipated annual resources. This is essential so as to avoid a pre-empting of resources for a given programme year.

13. Utilization of the Reserve Fund is progressing satisfactorily, and the Fund is serving the purpose for which it was created. While the permissible ceiling offers sufficient scope for meeting requirements, maximum per-project limits, established in 1979, will have to be reviewed because of inflation.

B. GENERAL OBSERVATIONS

14. This is an overall performance report on the Agency's technical co-operation activities in 1981 as measured and indicated by income and expenditure data.

15. In the report, information is given on the various funds received for these activities, the extent to which they were utilized and the purposes for which they were used. As the report is of financial-statistical character, it is in the figures, tables and annexes that the detailed story is told. The narrative only summarizes certain developments and trends that can be deduced from the statistics and focuses on some major issues in which the Board of Governors has shown interest.

16. No attempt has been made either to chronicle the achievements of individual projects or to describe the impact of the assistance delivered. Such assessments will be provided regularly in future evaluation reports. Write-ups on projects and activities in specific fields are, in addition, often contained in issues of the Agency's Bulletin.

17. While there is a growing and justified interest in evaluation and subsequent impact reporting, the accountability of the Agency vis-à-vis contributors of funds and the desire of Member States to obtain information on the overall flow of technical assistance will always necessitate the reporting of financial data. It should, however, be feasible to issue evaluation and performance reports at the same time, should this be the wish of the Board.

18. The multiple funds that constitute resources for the Agency's technical co-operation activities, their complex structure and their interlinkages with the varied programmes through which these activities are carried out will necessitate that, even in a performance report of a statistical nature, some detail is sacrificed for the sake of clarity. Unfortunately, it was not possible to circulate a questionnaire dealing with these matters during 1981, but it is still the Secretariat's intention to do so.

19. Some re-arrangement of this report has been carried out. Part II now provides first an overview of the structure of the Agency's technical co-operation activities. This is followed by a review of the resources or income side of the various funds involved. Aspects of the assistance actually provided are then discussed on the basis of expenditures and obligations made against each of these funds. Part II concludes with a description of developments in some areas of relevance to the Agency's technical co-operation activities.

20. All figures, tables and annexes are found at the end of the report. Part III now consists of explanatory notes to the statistics contained in the figures, tables and annexes that follow. As will be seen, several of the figures have been redesigned.

PART II. REVIEW OF THE AGENCY'S
TECHNICAL CO-OPERATION
ACTIVITIES

A. STRUCTURE OF THE AGENCY'S TECHNICAL CO-OPERATION ACTIVITIES

21. The funds needed to enable the Agency to assist its developing Member States in their efforts to establish and strengthen infrastructures and to obtain know-how in the wide variety of fields in which nuclear sciences can be applied are drawn from a number of sources.

22. At the level of the individual recipient country, it matters little from which specific fund technical co-operation activities are financed, provided the inputs received from or through the Agency meet Member States' needs to a satisfactory degree.

23. What is important in this regard is the utilization of all funds to the maximum advantage of the ultimate beneficiaries, the Agency's Member States. The needs of a recipient country require, at the national level, a considerable degree of co-ordination and supplementarity between the various funds for and programmes of technical co-operation and between the different components of such programmes. As this is as it should be, the separate descriptions of the various sources and programmes in the following paragraphs may seem rather artificial. However, for many reasons - such as accountability to donors, different financial and administrative requirements for each of the funds, compatibility with the Agency's accounts, audit requirements, and different rates of growth and implementation - the Agency is obliged to make distinctions when reporting on its technical co-operation activities.

24. The sources available to the Agency for its technical co-operation activities are as follows:

- | | |
|--------------------------------------|--|
| (a) <u>Technical Assistance Fund</u> | Contributions made by Member States towards the target for voluntary contributions, augmented by miscellaneous income. |
| (b) <u>Extrabudgetary funds</u> | Cash contributions made by Member States over and above their contributions to the Technical Assistance Fund. |
| (c) <u>Assistance in kind</u> | Contributions made by Member States in the form of cost-free experts, equipment and fellowships. |

(d) UNDP

Funds received for the implementation of UNDP projects for which the Agency has been designated executing agency.

25. In some statistical figures and tables in this report, the first three of these categories are considered together as "Agency resources".

26. On the utilization side, the following major programmes can be distinguished:

(a) Regular Programme

A programme comprising expert services and equipment arranged in the form of individual projects and approved annually by the Board of Governors.

(b) Fellowship Programme

A programme for individual training, the core of which is financed from the Technical Assistance Fund with the approval of the Board; however, more than half of the activities are financed from other sources.

(c) Training Course Programme

A programme for group training approved by the Director General and largely financed from the Technical Assistance Fund.

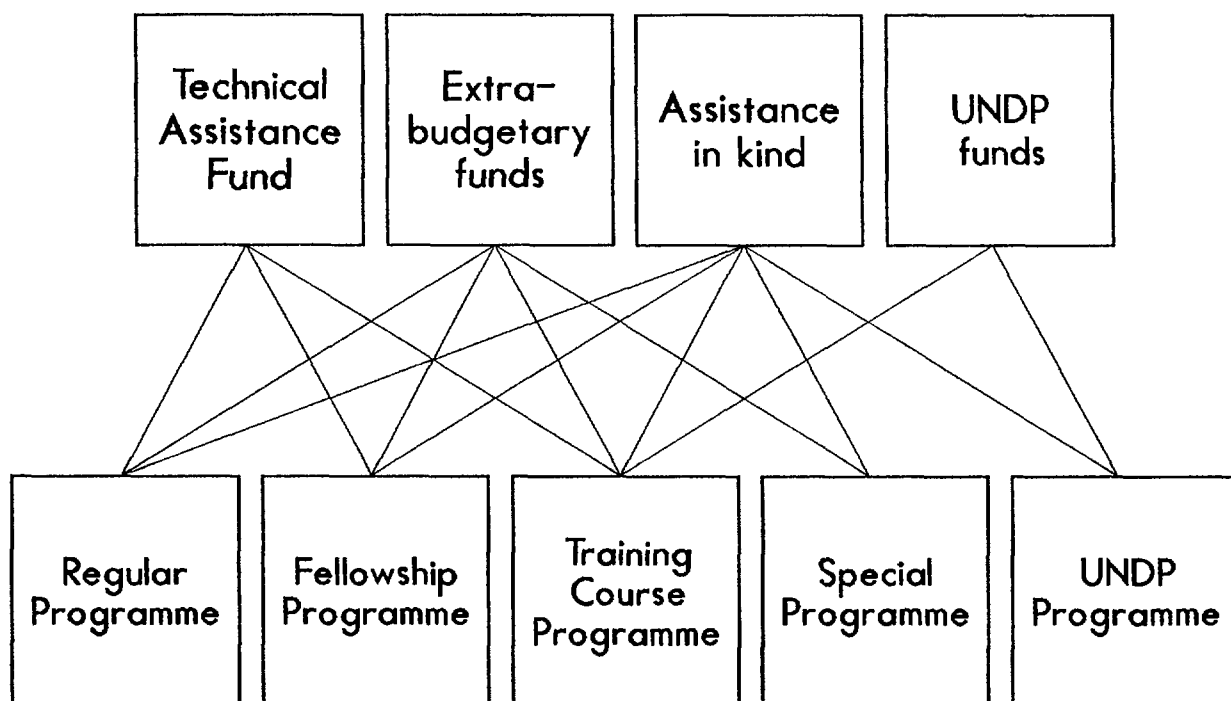
(d) Special Programme

Projects (usually large-scale) identified jointly by donor and recipient Member States; executed by the Agency utilizing extrabudgetary cash and in-kind contributions specifically made for this purpose.

(e) UNDP Programme

Projects executed on behalf of UNDP.

27. Attention is drawn to the fact that programmes (d) and (e) above also consist of expert, equipment, fellowship and training course components. Although certain funds are predominantly used for certain programmes, co-ordination between funds is in the interest of the efficient delivery of external inputs. The requirement that recipient country needs be met to the greatest possible extent demands flexibility on the part of the Secretariat so that, in effect, nearly all funds can be used for all programmes. The inter-relationships between funds and programmes can be represented as follows:



28. Although the diagram appears complex, it is in fact a simplification of the real situation. In administering and utilizing the Technical Assistance Fund, the Secretariat is obliged to keep separate track of the Fund itself, of the portion set aside for the Reserve Fund, and of the convertible and non-convertible currencies, in both funds separately, as well as by programme year for all components (experts, equipment, fellowships, training courses and subcontracts). The utilization of extrabudgetary funds, consisting of 14 separate donor funds in 1981, has to be kept separately identifiable by programme year for each donor. Similar requirements apply to assistance in kind. All the above-mentioned elements on the income side can be correlated with a large number of elements on the expenditure, or programme, side. There are over 65 recipient countries, ten different fields of activity and five components of assistance. All of these are accounted for against more than ten programme years; implementation, however, takes place in calendar years. Also, Member States are interested in such matters as the origin of the equipment and experts. In principle, all the relationships involved could be reported on, but the possible correlations are staggering.

29. The statistical groupings presented in this report still reflect earlier days, when the Agency administered essentially only two funds, each linked to its own programme. With an ever-increasing complexity in structure, the time is rapidly approaching where detail may have to be sacrificed for the sake of clarity. The views of Member States will be taken into account before any major changes are made.

30. In the text that follows, resources and their utilization are discussed by fund category, although a case could be made for describing the assistance delivered under each of the programme headings mentioned in paragraph 26. As these programmes are very closely interwoven with regard to resources and as there is understandable interest in information on the rate of expenditure from each fund, it was decided to use the fund categories also for the utilization side.

B. RESOURCES: \$24 294 000

31. The total resources made available to the Agency for its technical co-operation activities through all the above-mentioned funds amounted to \$24 294 000 in 1981. This represents an increase of 15.8% over 1980, when the total resources available stood at \$20 971 000. The above-mentioned funds contributed the following shares to these total resources: Technical Assistance Fund, 52.2%; Extrabudgetary funds, 15%; Assistance in kind, 11.5%; and UNDP, 21.3%. Relative to earlier years, extrabudgetary resources gained in importance, whereas the share of in-kind assistance and UNDP in the total resources declined. The Technical Assistance Fund constituted, as always, about half of the resources available.

32. Assuming an inflation rate of about 10% and the involvement of increasing numbers of developing Member States in more and more of the fields within the Agency's purview, a resource growth rate of 15% per annum would not be excessive if growth in real terms is aspired to. In view of the uncertainty and likely decline of UNDP funding and the more or less static nature of assistance in kind, this overall growth rate can only be ensured through substantial growth in the Technical Assistance Fund and in extrabudgetary resources.

33. Let us now look at the resource performance of the individual funds.

1. Technical Assistance Fund: \$12 675 000

34. The Technical Assistance Fund remains by far the most important source of funding for the Agency's technical co-operation activities. The voluntary contributions and miscellaneous income that make up this fund rose by 19.2%, from \$10 633 000 in 1980 to \$12 675 000 in 1981, roughly maintaining the growth rate achieved in 1980.

35. It may be noted (Table 2) that in 1980 the amounts pledged as voluntary contributions to the Fund were 4.2% short of the target of \$10.5 million. However, miscellaneous income made up for this shortfall so that, in fact, the money available for that year exceeded the target by \$132 794. In 1981,

however, pledges fell short of the target of \$13 million by 9.4%, or \$1 227 177. Even the \$901 984 derived from miscellaneous income was therefore not sufficient to make up this shortfall, so that available resources for the Technical Assistance Fund remained \$325 193 below the target amount. It is hoped that pledges for 1981 made during 1982 will improve the picture.

36. Total miscellaneous income in 1981 amounted to \$1 319 358, from which \$417 374 had to be deducted for exchange losses, leaving a balance of \$901 984. Of the substantial amount received as miscellaneous income, \$904 698 was derived from investment, \$23 976 from other sources and \$390 684 from assessed programme costs. Assessed programme costs are charged to individual recipient countries at a rate of 8% of the value of the technical assistance actually delivered to the country each year. As they are treated as programme resources, they constitute a valued additional contribution towards technical co-operation among developing countries.

37. The total resources of the Technical Assistance Fund were insufficient to meet all the requests received from Member States. After the apportionment of money to the Reserve Fund and the Fellowship and Training Course Programmes, \$8 631 300 was expected to be available for assistance in the form of experts and equipment. This allowed for the approval of 153 projects for which funds would be available. While 57 project proposals with an estimated value of \$6 million had to be rejected for technical reasons and 70 requests valued at approximately \$2.5 million could be met from previously approved assistance or consolidated with other requests, there were nevertheless 41 technically sound and feasible project proposals that had to be included in the footnote-a/ category since the \$2 331 600 required to implement them were not immediately available from the Technical Assistance Fund. Of these projects, 76.3% had been made operational by year-end, mainly through extrabudgetary resources received for this purpose.

2. Extrabudgetary funds: \$3 645 000

38. The resources made available to the Agency in this category rose by 35.4%, from \$2 692 000 in 1980 to \$3 645 000 in 1981. The United States of America remained the largest single contributor, at 34.5%. The Federal Republic of Germany made a very significant increase in its extrabudgetary contributions, providing 22.9% of all extrabudgetary funds; it was closely followed by Sweden, at 22.3%. Italy, Finland and the United Kingdom have now joined the ranks of major donors of extrabudgetary resources.

39. The following table shows the origin of the resources received.

Extrabudgetary funds: 1981

Country	Resources for 1981 programme year received in prior years	New resources for 1981 programme year	Total for 1981 programme year	Resources for future years made available in 1981
USA	35 000	1 224 256	1 259 256	-
Germany, F.R.	8 000	827 429	835 429	-
Sweden	782	813 230	814 012	165 613
Italy	-	251 000	251 000	300 000
Finland	-	123 457	123 457	-
Japan	-	85 000	85 000	-
United Kingdom	-	84 800	84 800	115 200
Denmark	60 000	-	60 000	-
Belgium	-	36 999	36 999	-
Funds in trust	-	95 500	95 500	-
TOTAL	103 782	3 541 671	3 645 453	580 813

40. The major part of these contributions was made for projects that had been approved by the Board but for which no immediate financing was available. The United States, Italy, Finland, the Federal Republic of Germany and the United Kingdom all made funds available for this purpose. The Italian contribution made it possible for the first time to declare a multi-year footnote-a/ project operational for its entire duration.

41. Thanks to these contributions, an increasing percentage of the so-called footnote-a/ projects could be made operational in recent years - namely, 23.5% in 1978, 35.2% in 1979, 63.6% in 1980 and 76.3% in 1981.

42. A significant portion of the Agency's extrabudgetary resources was made available for the Special Programme: large-scale agricultural projects in India and Bangladesh, both supported by Sweden, and a large-scale tsetse fly eradication project in Nigeria, supported by the Federal Republic of Germany, Belgium, Sweden and Italy. The United Kingdom supported the latter project through in-kind contributions. Not included in these resources are \$116 279 donated by Australia for an isotope hydrology project and \$80 000 donated by Japan for food preservation research programmes and the maintenance of medical instrumentation within the framework of the Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology (RCA).

43. The "funds in trust" amount in the table in paragraph 39 represents extrabudgetary funds received from Member States to finance technical co-operation activities for themselves. These amounts consisted of \$53 000 from Spain, \$40 000 from Portugal and \$2500 from the Libyan Arab Jamahiriya. Whereas in previous reports such funds were only mentioned in Annex 1B, they should be regarded as resources made available to the Agency for the implementation of technical co-operation projects and have, therefore, been

included in all tables and figures in this report. Prior-year figures have been adjusted accordingly. This follows UNDP practice, where government cash contributions and cost-sharing are considered an integral part of the total resources on which a UNDP country programme is based.

3. Assistance in kind: \$2 788 000

44. The value of the assistance in kind increased by 6% from \$2 628 000 in 1980 to \$2 788 000 in 1981. Assistance in kind accounted for 11.5% of the resources made available for technical assistance in 1981. Nearly all of it (95.3%) was provided in the form of fellowships and cost-free lecturers in support of the Agency's training programmes.

45. The offer by Argentina to provide experts for two footnote-a/ projects, one in Mexico and one in Peru, made it possible to declare these projects operational.

46. An additional resource, not reflected in the statistical data, is the value of lecturers and facilities made available by the governments of countries where regional and interregional training courses were held (Annex II). Without this valuable assistance it would not have been possible to carry out these training activities.

4. UNDP: \$5 186 000

47. UNDP provided 21% of the Agency's technical co-operation resources in 1981. The resources made available by UNDP included, for the first time, an amount of \$118 000 from the Interim Fund for Science and Technology for Development. In view of a restructuring of expenditure reporting in accordance with UNDP instructions and in conformity with the Agency's accounts, the UNDP resource figures for the last few years are now reported differently (for a technical explanation see para. 99). While this results in fluctuations different from those described in reports of previous years, a trend towards a decreasing UNDP share in total resources is discernible. UNDP resources in 1981 were slightly higher than those in 1980 (\$5 186 000 against \$5 018 000), but a drop may well occur in the coming year.

48. As explained in the 1980 report, the Agency exercises no control over the amount of resources made available to it by UNDP; neither does UNDP itself for that matter. It is the government in each country that determines which projects are to be included in its UNDP country programme. While, even in normal times, a project proposal in the Agency's field may not always receive sufficient priority with the country's planning authorities to be included, in periods of severe budgetary constraint it is still more difficult to obtain support for some of the Agency's projects and project proposals. At present, UNDP is in such a period.

49. In establishing Indicative Planning Figures (IPFs) upon which the individual programmes for each country for the 1982-86 cycle are based, UNDP's Governing Council had assumed an annual growth rate for resources of 14%. This figure was based on an expected inflation rate of 10%, population growth of 2.5% and a real growth in the programme of 1.5%. However, contributions for the 1981 programme showed a drop of 7% as compared to the level in 1980, and those for 1982 are projected as being only 5% higher than the low 1981 level. The implications are that UNDP will not be able to afford programme expenditures in 1982 in excess of \$550 million; this is nearly \$100 million below the 1981 expenditure level. To ensure that expenditures do not go beyond this amount, UNDP has had to impose strict limitations on budget levels for each country. This will have serious consequences for the Agency's UNDP projects. Although UNDP assured executing agencies that budgeted and authorized project funds for 1981 that had not been obligated by year-end would have first claim on 1982 resources, this is not happening in practice.

50. At the country level, there is mounting pressure from various substantive ministries to resist cuts and rephasing of UNDP projects in their own fields. UNDP Resident Representatives have ultimately to accept the priorities of governments in this respect. While the situation varies from country to country, projects in the Agency's field are proving to be particularly vulnerable to priority reassignments by government bodies responsible for central planning. Cables were received towards the end of 1981 indicating a severe curtailing of approved budgets for 1982 and 1983 through rephasings into later years with, in some cases, the loss of funds not obligated in 1981.

51. As in 1980, UNDP made an amount of \$15 000 available to the Agency under its sectoral support programme. Unlike overheads received from UNDP (\$992 444 in 1981), which are regarded as miscellaneous income in the Agency's Regular Budget, these sectoral support funds are available to the Department of Technical Co-operation and have significantly assisted in the financing of programming missions to Panama and Viet Nam.

C. UTILIZATION OF RESOURCES - ASSISTANCE DELIVERED: \$20 960 300

52. The total amount of technical assistance furnished increased from \$18 834 300 in 1980 to \$20 960 300 in 1981, thereby passing the \$20 million mark for the first time. It is in the utilization of resources that wide differences occur between the various funds.

53. Although technical co-operation financed from the Technical Assistance Fund, the mainstay of the Agency's programmes, showed a record increase of 34%, the overall rate of increase in delivery was only 11.3%, a lower growth rate than in 1980. This was due to much lower expenditures under the UNDP Programme, which decreased by 15.3%.

54. For the first time since 1978 an increase was achieved in the number of expert man-months delivered, which rose from 806 in 1980 to 851 in 1981. Nevertheless, the number of expert man-months still to be delivered by year-end rose from 1092 to 1154, the increase being caused by projects that only became operational through the receipt of extrabudgetary resources in the second half of the year. Of these 1154 man-months, 28% related to projects in agriculture, 14% to projects in nuclear safety and 11% to projects in nuclear physics. Viewed regionally, 38.5% related to experts for projects in Asia, 29% to experts for projects in Africa and 22.5% to experts for projects in Latin America.

1. Technical Assistance Fund: \$10 436 500

55. As mentioned previously, the assistance actually delivered from the Technical Assistance Fund rose by 34%, from \$7 813 700 in 1980 to \$10 436 500 in 1981, exceeding the \$10 million mark for the first time. In addition to this, the total commitments already made for assistance still to be delivered, such as equipment on order, rose by 40% to \$9 553 100.

56. This represents a record growth in implementation; for the first time ever, the growth was very much higher than the growth in resources for this fund.

57. It is noteworthy that 1981 was the first year in the history of the Technical Assistance Fund that the trend towards ever-increasing earmarkings (unobligated resources for approved assistance still to be implemented) did not continue. As a consequence of the remarkable increase in delivery, the amount of earmarkings actually declined, from \$7 811 000 at the end of 1980 to \$7 301 000 at the end of 1981.

58. Expert services still to be delivered accounted for 64.7% of the earmarked funds. While, in financial terms, the backlog of technical assistance in the form of expert services increased by 3%, owing to higher average costs per man-month, in terms of man-months it declined by 8%, from 952 to 875.

59. Of the funds earmarked for approved assistance remaining to be delivered at the end of the year, 50% related to projects approved in 1981, 26% to projects approved in 1980, and 24% to projects approved more than two years ago.

60. By 31 December 1981, 71.4% of the 1981 programme financed from the Technical Assistance Fund had been implemented, as well as 83.1% of the 1980 and 91.4% of the 1979 programmes. A year earlier, on 31 December 1980, only 59.9% of the 1980 programme had been implemented, and the figures for the two prior years, 1979 and 1978, were 82.3% and 87.2% respectively.

61. Although implementation was therefore significantly higher in 1981, longer-term averages show that implementation rates remain fairly constant: current (or first-year) implementation was 67.9% in 1977, 67.4% in 1978, 68.3% in 1979, 59.9% in 1980 and 71.4% in 1981. In view of the complexity of the programme and the fact that larger amounts are involved each year, it would not be realistic to assume a first-year implementation rate going much beyond 70%.

62. If measured against a cumulative ten-year programme, implementation again shows considerable stability at a high level, rates for the total ten-year programme being 87.8% in 1977, 87.6% in 1978, 87.7% in 1979, 85.8% in 1980 and 88.7% in 1981.

63. As the following table shows, discussions concerning the utilization of the surplus in non-convertible currencies and the problem of a corresponding deficit in convertible currencies may now be laid to rest: no imbalance exists any more.

Comparison of available cash resources and programme commitments
as at 31 December 1980 and 1981
(in thousand of dollars)

	Total resources		Convertible currencies		Non-convertible currencies ^a	
	1980	1981	1980	1981	1980	1981
<u>Available cash resources</u>	12 734	15 057	8 267	11 336	4 467	3 721
<u>Less: Programme commitments^b</u>						
unliquidated obligations	5 584	7 819	3 270	4 515	2 314	3 304
earmarkings	<u>7 811</u>	<u>7 301</u>	<u>6 200</u>	<u>6 762</u>	<u>1 611</u>	<u>. 539</u>
Sub-total	<u>13 395</u>	<u>15 120</u>	<u>9 470</u>	<u>11 277</u>	<u>3 925</u>	<u>3 843</u>
<u>Surplus:</u>						
can be funded, or	-	-	-	59	542	-
<u>Deficit:</u>						
cannot be funded	(661)	(63)	(1 203)	-		(122)

^a In this report the term "non-convertible currencies" refers to the 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.

64. The measures introduced in 1978 to redress the imbalance have thus, with the co-operation of all concerned, been an unqualified success, so much so that a minor deficit of \$122 000 in non-convertible currencies now exists, against a surplus of \$59 000 in convertible currencies. The resulting overall deficit of \$63 000 against total resources of just over \$15 million is as close to a balance as can probably be achieved in a programme of this size and complexity.

65. This means that, for the first time since 1978, no substantial deficit had to be "worked off"; all the resources received for the 1982 programme could be fully programmed.

66. As can be seen in Table 4, training activities accounted for 30.5% of all expenditures from the Technical Assistance Fund in 1981; this is close to the average figure of 31.4% for the last five years. While expenditures on experts and equipment taken together remained stable at around 68% of total expenditures, a gradual but persistent shift has occurred between these two components. Expenditures on experts declined from 36.8% of total expenditures in 1977 to 21.1% in 1981, whereas the equipment share rose from 33.2% to 47.6%.

2. Extrabudgetary funds: \$2 742 100

67. Technical assistance provided from these sources rose by 9.7%, from \$2 499 500 in 1980 to \$2 742 100 in 1981; this is well below the growth in the resources in this category. It should, however, be borne in mind that some major contributions were made in the second half of the year. In such circumstances, it is not possible to achieve significant implementation in the year in which funds are made available, particularly since, in some cases, utilization of the funds is subject to specific conditions. In essence, therefore, 1981 expenditures partly reflect the utilization of funds made available in earlier years. Table 5C now shows the status of these funds by donor.

68. It should be noted that the amounts actually made available by a donor country for a specific project may exceed the cost of the project as budgeted in the programme approved by the Board. This is due primarily to variations in the cost of the expert component. The standard man-month cost used in Board documents is based on an average cost figure. As hundreds of man-months are involved (667 in 1982), experience has shown that the high costs for some projects, due to high local costs and long-distance travel, are offset by lower costs for other projects where less travel is involved or for which expertise can be provided by Agency technical staff. These averaging factors do not come into play at all - or only to a very limited extent - when a small number of projects is administered separately under a specific donor fund. While, in the case of the Technical Assistance Fund, the standard man-month cost figures can be - and regularly have been - recalculated, it is very difficult to make such adjustments in the case of extrabudgetary resources

since this would entail going back to the donor for additional funds for on-going or prior-year projects. While some major donors have been willing to allocate part of their extrabudgetary funds to cover overruns, others have understandably not felt able to do so. To avoid difficulties, some major donors have accepted higher average man-month cost figures for footnote-a/ projects implemented with their extrabudgetary contributions. With the increase in the number of donors each financing a few projects, the Secretariat will have to standardize this procedure by establishing somewhat higher expert cost figures for footnote-a/ projects in the 1983 programme.

69. Of the extrabudgetary funds spent, around 56% went for experts and equipment in Regular Programme projects, 25% for special projects and 19% for training course and fellowship activities.

3. Assistance in kind: \$2 788 000

70. The value of the assistance in kind delivered in 1981 rose by about 6.1%, to \$2 788 000, in line with the increase in the resources in this category. Nearly 59% of all the fellowships provided by the Agency were made possible through assistance in kind.

71. In view of the great importance of assistance in kind to the Agency's Fellowship and Training Course Programmes, it should be noted that there has been a reduction in recent years in the number of Type II (cost-free) fellowships made available by Member States. While, in some cases, the Agency is informed of the availability of a specific number of fellowships or man-months, the in-kind donations are sometimes offered in the form of monetary amounts representing their estimated value, and such amounts have often been frozen for two or more years while inflation reduces the number of man-months that can be financed from them.

72. For the Fellowship and Training Course Programmes as a whole, the number of fellows receiving training and the total number of man-months of training provided dropped slightly in 1981. The number of awards rose from 946 in 1980 to 987 in 1981. There was also an increase, from 70.7% to 75%, in the percentage of nominations resulting in effective awards.

73. It has become increasingly difficult to identify host institutions willing to accept Agency fellows in certain specializations, including on-the-job training in nuclear-power-related fields. It is hoped, therefore, that Member States, apart from continuing their support of the Agency's training programme through Type II fellowships, will assist the Agency in making training opportunities available when called upon, especially for on-the-job training, which is so urgently needed in many cases.

4. UNDP: \$4 993 700

74. While the technical assistance delivered from UNDP funds in 1981 (\$4 993 700) accounted for 23.8% of all technical assistance expenditures, it was substantially lower (by nearly \$900 000) than in 1980. The decrease was foreseen in last year's report. In the normal course of events, such a sharp decrease should not occur in 1982 since unliquidated obligations were higher at the end of 1981 than at the end of 1980. However, in view of the measures introduced by UNDP to limit expenditures, no improvement can be expected in 1982.

75. During 1981, there were 37 projects under implementation with a total budget of \$24.4 million, of which \$14.7 million had been implemented prior to 1981. Six new projects were approved and five were completed.

76. The Interim Fund for Science and Technology for Development (IFSTD), still short of resources, was unable to approve project proposals submitted by the Agency in 1980. However, at least one of these proposals, made by the Agency in conjunction with UNIDO, for a regional, Latin American project on non-destructive testing received a positive assessment and approval now depends on the level of pledges made to IFSTD. Meanwhile, one smaller project, "Application of Modern Techniques in Physics to Development", submitted through the International Centre for Theoretical Physics in Trieste, was approved. The project consists of two training courses, one of which, dealing with solid-state physics in Africa, started in December 1981; the other, in the field of monsoon dynamics, is taking place in Bangladesh in 1982.

D. S P E C I A L I S S U E S

1. Multi-year projects and overprogramming

77. Multi-year programming, a concept that has been instrumental in securing the utilization of all types of currency in which contributions are made, is also proving of value in other respects. In many cases, activities of real significance to Member States have been undertaken that would not have been possible on a strictly annual basis.

78. Close contacts with Member States, including multi-disciplinary missions in 1981 and previous years, have stimulated true forward planning directly linked to countries' development objectives in the sectors to which multi-year projects relate. This is reflected in an increase in the number of such projects. For the 1981 programme, 39 were approved with a total future-year component value of \$3 060 400 for the next two years. The 1982 programme includes 63 operational multi-year projects, of which the future-year components amount to \$8 325 900 for the next four years.

79. While this trend is healthy, multi-year projects do tie up future resources. Furthermore, unchecked growth could ultimately lead to a commitment of future resources such as to leave little possibility for approving new activities the need for which may not have been foreseen in earlier years. A situation of this kind should, of course, not be allowed to develop.

80. In the 1982 programme, \$2 510 000 - or 22.3% of the new resources set aside for experts and equipment - have been committed through multi-year projects approved in prior years. While it is too early to forecast precisely the resources for 1983, it may nevertheless be assumed that around 36% of the resources expected to be available for experts and equipment will already be committed to multi-year projects since such commitments now stand at \$4 814 000. It is felt that, in the interest of a flexible and responsive programme, future commitments should not exceed 50% of the anticipated resources of the year against which they are made.

81. As multi-year projects commit resources not yet received, they cannot be completely divorced from the concept of overprogramming. The 1982 programme, prepared during July/August of 1981, was based on anticipated 1982 resources plus overprogramming by 10% of the 1982 target. The resource estimates had, of course, to be based on certain assumptions with regard to investment and other income that would be forthcoming in 1981. By year-end the total income from various sources was considerably higher than could have been anticipated. At the same time, savings in the on-going programme during 1981 reduced the programme deficit, so that by year-end the programmable resources for 1982 were well above earlier estimates. This means that the 1982 programme now shows overprogramming by only 2.1% of total programmable resources, with 0.1% overprogramming in convertible and 9.2% in non-convertible currencies.

2. Reserve Fund

82. The Reserve Fund, in its second year of existence, proved again to be an extremely valuable tool, enabling the Agency to make flexible and prompt responses to unforeseen, urgent needs.

83. The Fund was kept at the same level in 1981 as in 1980 (\$250 000), but utilization increased considerably. A total of \$193 900 - as against \$132 500 in 1980 - was approved for meeting urgent requests. Nearly one third of this amount was used for supplementary assistance to existing projects in cases where countries felt that project objectives could not be achieved or success would be threatened unless small but vital additional inputs were provided.

84. Of the total approvals, only 18% related to equipment; the remainder related to urgently required, short-term advisory services. In some cases, experts assisted governments in formulating more detailed requests for future projects.

85. It is likely that, during the coming year, the total amount set aside for the Fund will be utilized, in which case a higher level may have to be considered for the 1983 programme.

86. A higher level, based each year on past performance, can easily be kept below the accepted ceiling of 2.5% of the resources available. However, in due course the maximum amount that can be approved in respect of any individual request for Reserve Fund financing, set at \$25 000 four years ago, should certainly be reviewed. This amount provided over 7 man-months of expert services in 1979, but will provide only 4.5 man-months in 1982. Rather than specifying a new maximum amount, which would again be subject to inflationary adjustments, it would be best to seek a solution such that no project approved under the Reserve Fund receives more than 10% of the total resources of the Fund.

3. Technical co-operation computer system

87. During 1981, the computer system dealing with Regular and Special Programme projects finally became fully operational. In addition to supplying data on on-going projects, it contains information on all projects approved by the Board since 1 January 1976.

88. The system incorporates various types of data generated in both the Department of Technical Co-operation and the Division of Budget and Finance. Information is entered on all major steps of the equipment procurement and expert recruitment processes. The system allows for close monitoring of each project, even before field implementation, thus permitting the early identification of delays at any stage.

89. During implementation, all financial data are recorded, making it possible to follow precisely, by programme year, the utilization of the various types of currency from all the separate funds available to the Agency for its technical co-operation activities. Given the increase in the number of funds and multi-year projects, this type of control would not be possible without the new system.

90. Every month a full status report is issued for each project, containing basic data on project objectives, recipient institutions, local counterparts and relationships with other projects in similar fields in the same country. It identifies the Agency officers dealing with the various aspects of the

project and provides a detailed financial history, summarizing approvals, allotments, obligations, expenditures, expert man-months and equipment earmarkings still available. Details are provided on each expert post needed and on each task to be carried out, along with information on the status of recruitment. This includes dates of receipt of job descriptions, submissions to and clearances received from governments, and planned and actual contract dates. Similar data are provided in respect of equipment, indicating when procurement requests were received and when the equipment was ordered, expected to be shipped and finally despatched.

91. In addition to staff in the Department of Technical Co-operation, Division Directors, Divisional technical co-operation liaison officers and technical officers in other Departments receive the full status reports dealing with those projects for which they have some responsibility.

92. Apart from generating the reports described above, the system can provide a great variety of special print-outs designed to meet the different information needs of its users.

93. Work is now in progress on the computerization of Fellowship Programme data. Once this has been done, the Training Course Programme will be similarly incorporated into the system, to be followed by the UNDP Programme.

4. Evaluation

94. The computer system allows for very close monitoring of on-going projects under the Regular and Special Programmes and, in this manner, instantaneously provides data on the timeliness and co-ordination of the delivery of technical assistance inputs by project, by country, by region, by field, by component and for these programmes as a whole.

95. During the year under review, the Secretariat also continued its efforts to develop a more systematic approach to the evaluation of its past activities. Some 15 technical co-operation projects, completed between 1977 and 1980, were selected for evaluation by area office staff during regular visits to a number of Member States. Their findings were reported to the Board in document GOV/INF/400 in as much detail as was considered appropriate given the confidentiality which the Member States in question have a right to expect. In the same document, a review was presented of the experience gathered so far and of the constraints and limitations that appear to affect the Agency in this respect. The guidance provided by Member States to the Secretariat will play a significant role in shaping the evaluation methodology of the Agency and its objectives.

96. In the meantime, preparatory work is continuing on the setting up of an evaluation scheme to assess the effectiveness and impact of the Agency's Fellowship Programme. This activity is being undertaken with the help of an expert whose services are being provided on a cost-free basis by the United States. The tentative time-table foresees the completion of final reports on this subject early in 1983. It is hoped that some results, if not all, will be available for inclusion in next year's report.

97. Efforts to improve the design of technical co-operation projects through the revision of assistance request forms are continuing. New forms, which will be available to Member States for the 1984 programme year, will call for a more precise formulation of the problem and the project objectives, facilitating both appraisal of the request and subsequent evaluation.

PART III. EXPLANATORY NOTES TO STATISTICAL
FIGURES, TABLES AND ANNEXES

Figure 1A. Resources available for Agency technical co-operation
programmes: 1975-1981

98. This figure shows all resources made available to the Agency for technical co-operation activities from all funds for the programme years 1975-81. The difference between the amount shown for 1980 under the Technical Assistance Fund and the corresponding figure in the report for 1980 is due to the receipt of 1980 contributions in 1981. Modified figures for "Extrabudgetary funds" reflect both the incorporation of "Funds in Trust" and exchange rate fluctuations, which are now accounted for against the programme year for which the extrabudgetary contribution was made.

99. Comparison with Figure 1A in the report for 1980 shows a major difference in UNDP resources in the prior-year columns. As explained in paragraph 64 of the report for 1980, UNDP resources reflect the amount spent in the execution of UNDP-financed projects. In the 1980 and earlier reports, the amount spent - and, therefore, the resources - represented the actual disbursements made for goods delivered and services rendered. However, UNDP regards as expenditures not only disbursements but also unliquidated obligations, and the Secretariat reports these to UNDP accordingly. In order to match the Agency's accounts, the figures for present and prior-year UNDP resources have, in this report, been brought into line with this practice, so that they also now reflect actual disbursements plus unliquidated obligations.

100. The 1981 UNDP funds include resources made available by the UNDP-administered Interim Fund for Science and Technology for Development.

101. It should be noted that the amounts shown in Figure 1A do not include resources made available for future years.

Figure 1B. Utilization of resources: 1980, 1981 and 1972-1981

102. The upper part of the figure shows, by component and by major field of activity, the distribution of all assistance provided in 1980 and 1981, irrespective of source of funding. The lower part of the figure shows the distribution of all assistance by type in percentages.

Figure 2A. Distribution of expert services by field of activity: 1980 and 1981

103. This table shows, for training course lecturers and experts separately, the total numbers and the percentages of man-months of expert services provided in each of the Agency's ten major fields of activity.

Figure 2B. Distribution of expert services by region: 1981

104. A new graphic presentation is given of (i) the origin of experts, (ii) their destination and (iii) the time spent at the destination, grouped by geographic region.

Figure 3A. Distribution of equipment by field of activity: 1980 and 1981

105. This figure shows the total value of the equipment provided in each of the ten major fields of activity and the corresponding percentage.

Figure 3B. Distribution of equipment by region: 1981

106. Total equipment purchases, grouped by country of origin and recipient region, are shown in this figure; individual recipient countries are shown in Table 7. "Local payments" refer to customs, storage and internal transport charges in cases where these have been levied by recipient countries on equipment received.

Figure 4A. Distribution of trainees by field of activity: 1980 and 1981

107. Training course participants and fellowship holders are shown separately in this table, along with the total number and the percentage of man-months of training provided in each of the Agency's major fields of activity.

Figure 4B. Distribution of training by region: 1981

108. This graphic presentation shows where trainees studied, where they came from and how much training was received by the trainees from different regions. Individual recipient countries are shown in Table 7.

Figure 5A. Distribution of technical co-operation activities by field

109. In this new figure, percentages are shown for equipment, expert services and fellowships distributed over each of the ten major fields of activity and averaged over the past five years.

Figure 5B. Distribution of aid provided from the Technical Assistance Fund by type of currency and region: 1981

110. This figure, formerly Figure 5C, refers only to the Technical Assistance Fund and gives total 1981 expenditures broken down by region and for convertible and non-convertible currencies.

Figure 5C. Distribution of technical co-operation inputs by field and region

111. As the circles already indicate the relative shares of each field per region, the table below the figure now gives actual amounts rather than percentages.

Figure 5D. Distribution of technical co-operation inputs by region and source

112. In this new graphic presentation, expenditures from Agency resources (Technical Assistance Fund, Extrabudgetary funds and Assistance in kind) and from UNDP funds are shown for each region. Total expenditures from all funds by region are also given, as is a ten-year summary of Agency resources and UNDP funds spent in each region.

Figure 6. Trends in the technical co-operation activities of the Agency

113. Expenditures for experts, equipment and fellowships during the last six years are shown by year and separated into Agency and UNDP resources.

Figure 7. Status of implementation: Utilization of the Technical Assistance Fund

114. The bar chart shows the total resources available to the Technical Assistance Fund year by year - each year including the unobligated and unspent funds of prior years - and the expenditures and obligations incurred against these resources as at 31 December of each year. Obligations incurred against future years for approved multi-year projects are shown separately.

115. The graph below it shows the percentage of the available resources spent ("delivery rate") and committed ("implementation rate") during each year.

Table 1. Available resources: 1972-1981

116. This table is directly related to Figure 1A, but shows resources over a ten-year period. The Technical Assistance Fund is broken down by its various components. Total Agency resources (Technical Assistance Fund, Extrabudgetary funds and Assistance in kind) are shown separately from UNDP resources.

Table 2. Technical Assistance Fund: 1972-1981

117. The ten-year development of the target, of the amounts pledged and of the funds actually made available are shown (see Annex IV for 1981 contributions to the Technical Assistance Fund by Member States).

Table 3. Experts (classified by place of origin) and trainees in the field (classified by place of study): 1981

118. Expert and trainee information is broken down by UNDP and Agency resources. In the case of trainees, a breakdown is given for fellows, training course participants and scientific visitors.

Table 4. Types of technical co-operation: 1977-1981

119. This major financial table now shows all the technical assistance provided from all funds during the last five years, broken down by programme components. It is the only table that shows, in column (10), the balance for assistance in kind. In essence, this balance represents the estimated value of the man-months of training beyond the end of 1981 for fellows who had already started their studies in 1981.

Table 5A. Technical Assistance Fund by programme year and year of expenditure

120. This table shows the status of the programme financed from the Technical Assistance Fund and analyses in detail the time-frame during which full utilization of Technical Assistance Fund resources takes place.

Table 5B. Extrabudgetary funds by programme year and year of expenditure

121. This table, which follows the pattern of Table 5A, gives the total of all extrabudgetary funds by programme year, with yearly expenditures against each of these years. Project changes, contributions in later years for prior-year programmes, exchange rate fluctuations between the year in which contributions were received and years in which the expenditures were made change the prior-year figures each year. Since, at present, 14 different funds are involved, this table is one of the most labour-intensive to prepare; its continuation may have to be reviewed.

Table 5C. Extrabudgetary funds for technical co-operation activities by donor

122. This new table presents the status of all extrabudgetary funds. The moneys received, their utilization and the balance left for further implementation are given for each donor fund.

Table 6A. Recipients of expert services: 1981

123. A list is given of recipient countries showing the number of expert assignments and man-months provided to each country from Agency and UNDP resources. Experts not serving on country projects are shown under inter-country projects and training courses.

Table 6B. Recipients of training abroad: 1981

124. The list shows, by recipient country, the number of trainees and the total duration of their studies.

Table 7. Financial summary: 1981

125. This is a major table showing, by type of assistance and by fund, the total technical co-operation inputs received by each recipient country.

Table 8. Financial summary: 1958-1981

126. A summary is given, by country, of all the assistance provided since the beginning of the Agency's technical co-operation activities, in 1958.

Annex I. Utilization of extrabudgetary and in-kind contributions

127. Related to Tables 5B and 5C, this Annex shows, by donor and type, the technical assistance provided during 1981 from extrabudgetary resources and, separately, from assistance in kind.

Annex II. Training courses and study tours: 1981

128. All courses organized by the Agency in 1981 are listed along with numbers of participants and allotted budgets. This is the only table in which local participants and participants not financed from training course budgets are shown.

Annex III. Formal reports submitted to recipient country governments

129. For easier reference, the reports produced in 1981 have now been grouped by country. Also, the distribution status has been indicated. Of the 138 reports produced in 1981, 73 have already been de-restricted by governments.

Annex IV. Voluntary contributions and cost-free fellowships

130. Voluntary contributions to the Technical Assistance Fund are shown in Table A and cost-free fellowships offered and awarded in Table B.

Annex V. Projects under implementation for UNDP

131. This table includes a project being implemented for the Interim Fund for Science and Technology for Development.

Annex VI. Regular and Special Programme projects completed or cancelled during 1981

132. List A shows projects completed during the year along with the year of approval and the assistance provided. List B shows the cancelled projects.

Annex VII. Footnote-a/ projects made operational during 1981

133. These projects are shown with the source of the funds that made upgrading to operational status possible.

Annex VIII. Approvals against the Reserve Fund in 1981

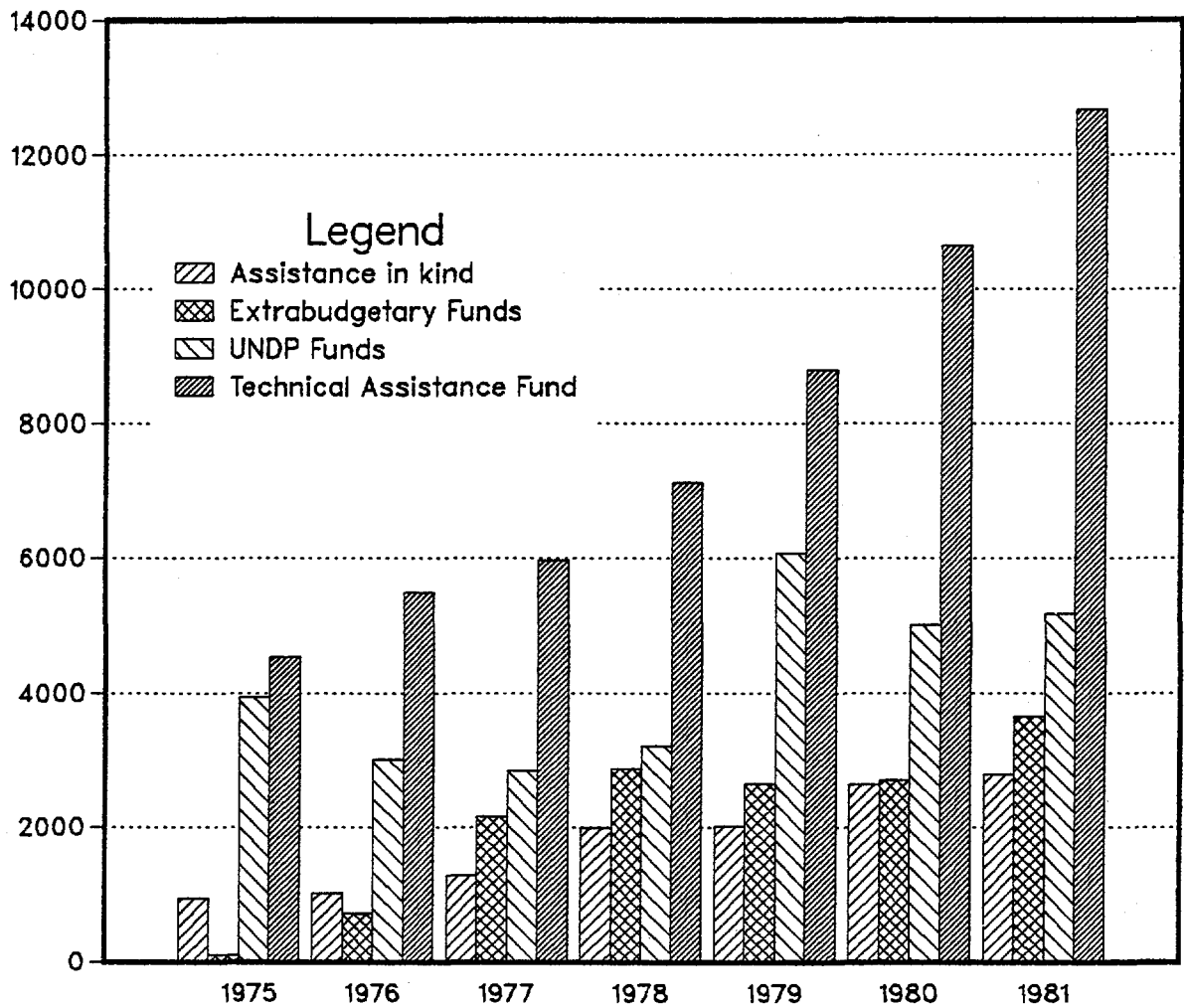
134. This table follows the format adopted in Annex IX to the 1980 report.

Annex IX. Changes to approved projects

135. The Secretariat is obliged to furnish information on changes to approved projects under the provisions of the Revised Guiding Principles. Projects may undergo several changes in the course of a year, but the list shows only net changes.

FIGURE 1A

RESOURCES AVAILABLE FOR
AGENCY TECHNICAL CO-OPERATION PROGRAMMES, 1975 - 1981
(in thousands of dollars)



Technical Assistance Fund	4 539	5 492	5 962	7 121	8 802	10 633	12 675
Extra-budgetary funds	106	729	2 147	2 860	2 643	2 692	3 645
Assistance in kind	942	1 021	1 284	1 987	2 015	2 628	2 788
UNDP	3 942	3 002	2 836	3 205	6 066	5 018	5 186
TOTAL	9 529	10 244	12 229	15 173	19 526	20 971	24 294

FIGURE 1B
UTILIZATION OF RESOURCES: 1980, 1981 and 1972-1981
(in thousands of dollars)

FIELD OF ACTIVITY	Year	Experts	Equipment	Fellowships	Share of total programme		
		\$	\$	\$	\$	%	
General atomic energy development	1980	469.4	873.8	333.2	1 676.4	8.9	
	1981	508.5	849.0	273.0	1 630.5	7.8	
Nuclear physics	1980	246.5	826.2	443.9	1 516.6	8.1	
	1981	304.7	993.4	308.8	1 606.9	7.7	
Nuclear chemistry	1980	61.6	155.2	356.0	572.8	3.1	
	1981	34.9	365.6	322.7	723.2	3.4	
Prospecting, mining and processing of nuclear materials	1980	1 116.7	1 426.3	410.8	2 953.8	15.7	
	1981	1 063.6	568.7	217.1	1 849.4	8.8	
Nuclear engineering and technology	1980	735.7	1 315.1	1 548.4	3 599.2	19.1	
	1981	673.7	1 544.1	893.5	3 111.3	14.8	
Application of isotopes and radiation in	Agriculture	1980	919.9	1 697.6	1 036.1	3 653.6	19.4
		1981	1 095.4	2 315.2	1 450.0	4 860.6	23.2
	Medicine	1980	300.2	649.2	688.6	1 638.0	8.7
		1981	309.1	900.3	1 342.3	2 551.7	12.2
	Biology	1980	24.2	13.1	124.2	161.5	0.9
		1981	56.5	127.6	177.0	361.1	1.7
	Industry and Hydrology	1980	327.9	1 086.5	231.6	1 646.0	8.7
		1981	359.8	1 324.1	285.4	1 969.3	9.4
Safety in nuclear energy	1980	453.0	155.1	808.3	1 416.4	7.5	
	1981	643.2	877.5	775.6	2 296.3	11.0	
Total assistance	1980	4 655.1	8 198.1	5 981.1	18 834.3	100.0	
	1981	5 049.4	9 865.5	6 045.4	20 960.3	100.0	
Ten-year total	1972-						
	1981	32 534.4	46 826.8	33 554.0	112 915.2	100.0	

Distribution of assistance by type

Type	1980 %	1981 %	1972-1981 %
Experts	24.7	24.1	28.8
Equipment	43.5	47.1	41.5
Fellowships	31.8	28.8	29.7
Total	100.0	100.0	100.0

FIGURE 2A

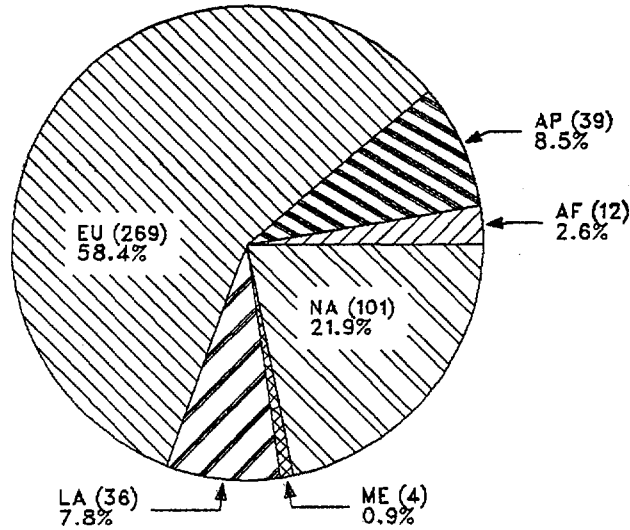
DISTRIBUTION OF EXPERT SERVICES BY FIELD OF ACTIVITY: 1980 and 1981

Year	Number of field staff			Field of activity	Number of man-months	%
	Training course lecturers	Experts	Total			
1980	18	42	60	General atomic energy development	81	10
1981	22	35	57		75	9
1980	22	20	42	Nuclear physics	51	6
1981	5	25	30		57	7
1980	9	9	18	Nuclear chemistry	13	2
1981	-	6	6		7	1
1980	3	46	49	Prospecting, mining and processing of nuclear materials	184	23
1981	15	54	69		180	21
1980	31	48	79	Nuclear engineering and technology	100	12
1981	26	46	72		106	12
1980	24	104	128	Applications of isotopes and radiation in agriculture	183	23
1981	33	106	139		214	25
1980	23	27	50	Applications of isotopes and radiation in medicine	55	7
1981	9	25	34		60	7
1980	4	5	9	Applications of isotopes and radiation in biology	7	1
1981	-	5	5		8	1
1980	4	35	39	Applications of isotopes and radiation in industry and hydrology	52	6
1981	15	29	44		55	7
1980	40	52	92	Safety in nuclear energy	80	10
1981	49	82	131		89	10

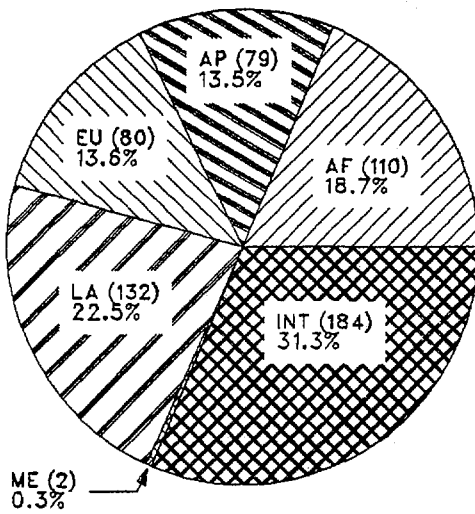
FIGURE 2B

DISTRIBUTION OF EXPERT SERVICES BY REGION: 1981

Where they came from:
(461 experts)



Where they went:
(587 assignments)



Abbreviations	
AF	= Africa
AP	= Asia and the Pacific
EU	= Europe
LA	= Latin America
ME	= Middle East
NA	= North America
INT	= Interregional Projects and Training Courses

For how long:
(851 man-months)

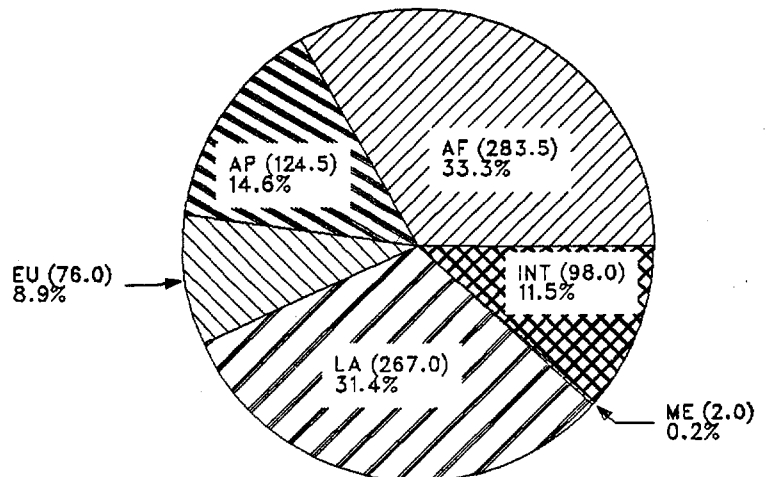
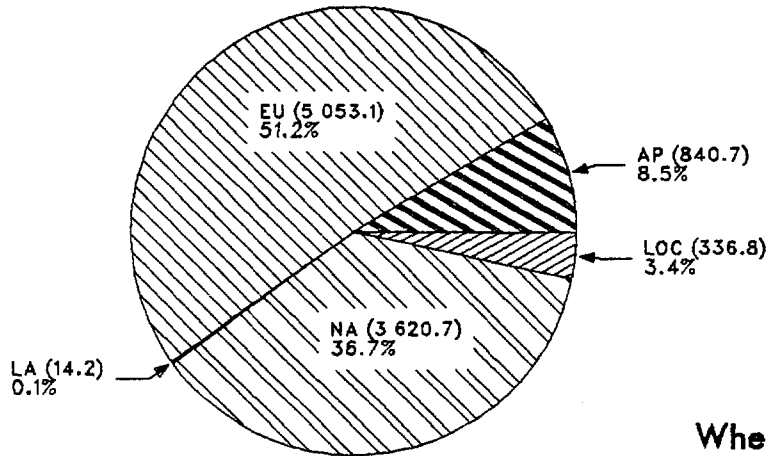


FIGURE 3A
 DISTRIBUTION OF EQUIPMENT BY FIELD OF ACTIVITY: 1980 and 1981
 (in thousands of dollars)

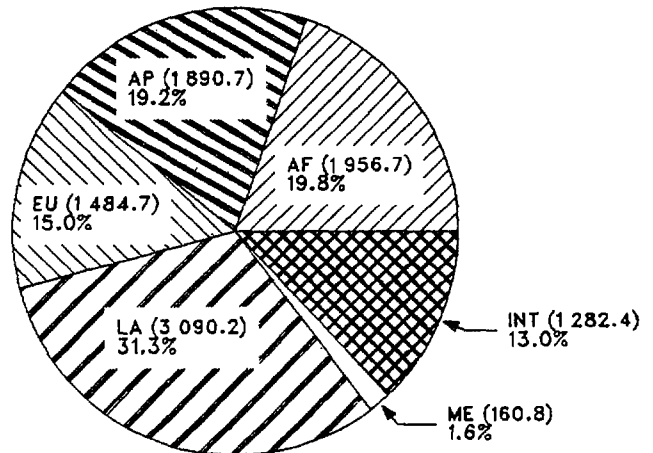
FIELD OF ACTIVITY	Year	\$	%	
General atomic energy development	1980	873.8	11	
	1981	849.0	9	
Nuclear physics	1980	826.2	10	
	1981	993.4	10	
Nuclear chemistry	1980	155.2	2	
	1981	365.6	4	
Prospecting, mining and processing of nuclear materials	1980	1 426.3	17	
	1981	568.7	6	
Nuclear engineering and technology	1980	1 315.1	16	
	1981	1 544.1	16	
Application of isotopes and radiation in	Agriculture	1980	1 697.6	21
		1981	2 315.2	23
	Medicine	1980	649.2	8
		1981	900.3	9
	Biology	1980	13.1	-
		1981	127.6	1
	Industry and Hydrology	1980	1 086.5	13
		1981	1 324.1	13
Safety in nuclear energy	1980	155.1	2	
	1981	877.5	9	

FIGURE 3B
DISTRIBUTION OF EQUIPMENT BY REGION: 1981
(in thousands of dollars)

Where it came from:
(9 865.5 purchased)



Where it went:
(9 865.5 delivered)



Abbreviations

- AF = Africa
- AP = Asia and the Pacific
- EU = Europe
- LA = Latin America
- ME = Middle East
- NA = North America
- INT = Interregional Projects
and Training Courses
- LOC = Local Payments

Countries from which equipment was purchased

Argentina	3.5	France	218.1	Poland	18.7
Australia	0.1	German D. R.	289.2	Singapore	0.9
Austria	546.2	Germany, F. R.	811.6	Sweden	53.7
Belgium	21.8	Hong Kong	3.7	Switzerland	98.6
Bulgaria	12.4	Hungary	128.4	UK	1 045.0
Canada	307.8	India	0.3	USA	3 312.9
Chile	3.6	Italy	61.6	USSR	1 469.7
Czechoslovakia	120.2	Japan	835.7	Yugoslavia	1.1
Denmark	5.0	Netherlands	30.5		
Finland	121.3	Peru	7.1		

FIGURE 4A

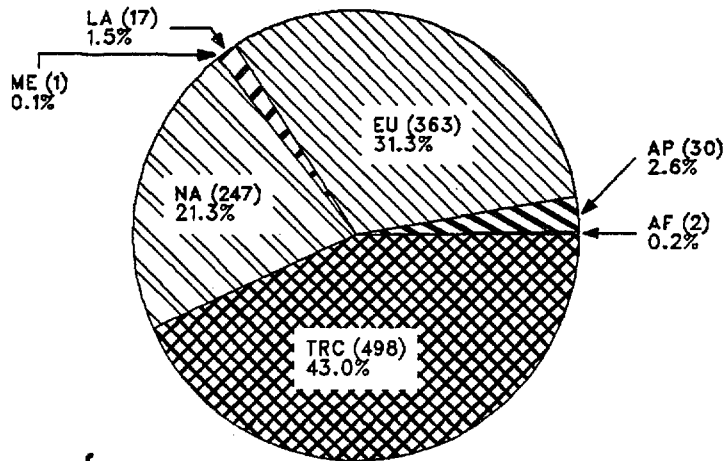
DISTRIBUTION OF TRAINEES BY FIELD OF ACTIVITY: 1980 and 1981

Year	Number of trainees			Field of activity	Number of man-months	%
	Training courses	Fellowships	Total			
1980	51	29	80	General atomic energy development	222	5
1981	56	25	81		199	5
1980	61	56	117	Nuclear physics	369	9
1981	23	45	68		246	6
1980	19	48	67	Nuclear chemistry	290	7
1981	-	42	42		217	6
1980	12	54	66	Prospecting, mining and processing of nuclear materials	274	6
1981	29	31	60		134	3
1980	98	147	245	Nuclear engineering and technology	934	22
1981	49	106	155		691	17
1980	55	135	190	Application of isotopes and radiation in agriculture	807	19
1981	110	139	249		946	24
1980	85	83	168	Application of isotopes and radiation in medicine	558	13
1981	37	102	139		678	17
1980	13	16	29	Application of isotopes and radiation in biology	96	2
1981	-	21	21		77	2
1980	13	31	44	Application of isotopes and radiation in industry and hydrology	195	4
1981	44	33	77		205	5
1980	80	86	166	Safety in nuclear energy	582	13
1981	150	64	214		584	15

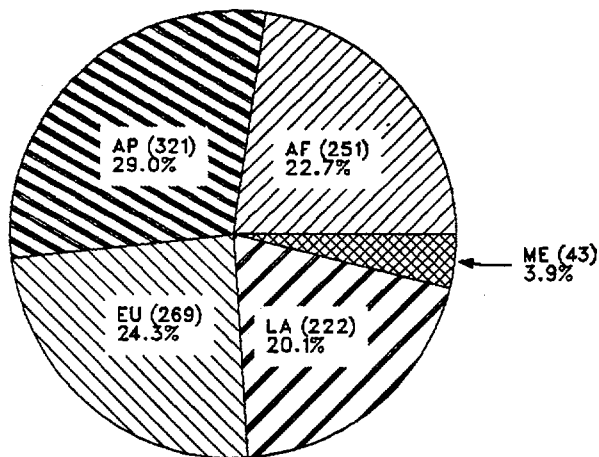
FIGURE 4B

DISTRIBUTION OF TRAINING BY REGION: 1981

Where they studied:
(1158 places of study)



Where they came from:
(1106 fellows/trainees)



Abbreviations	
AF	= Africa
AP	= Asia and the Pacific
EU	= Europe
LA	= Latin America
ME	= Middle East
NA	= North America
TRC	= Training Courses

Training received:
(3976.5 man-months)

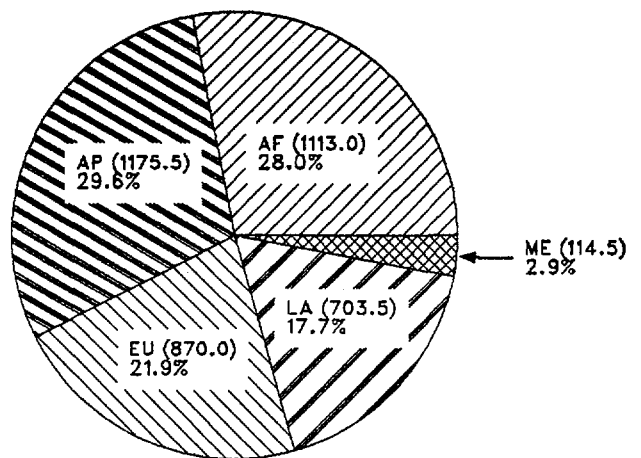


FIGURE 5A

DISTRIBUTION OF TECHNICAL CO-OPERATION ACTIVITIES BY FIELD
(averaged over the past five years)

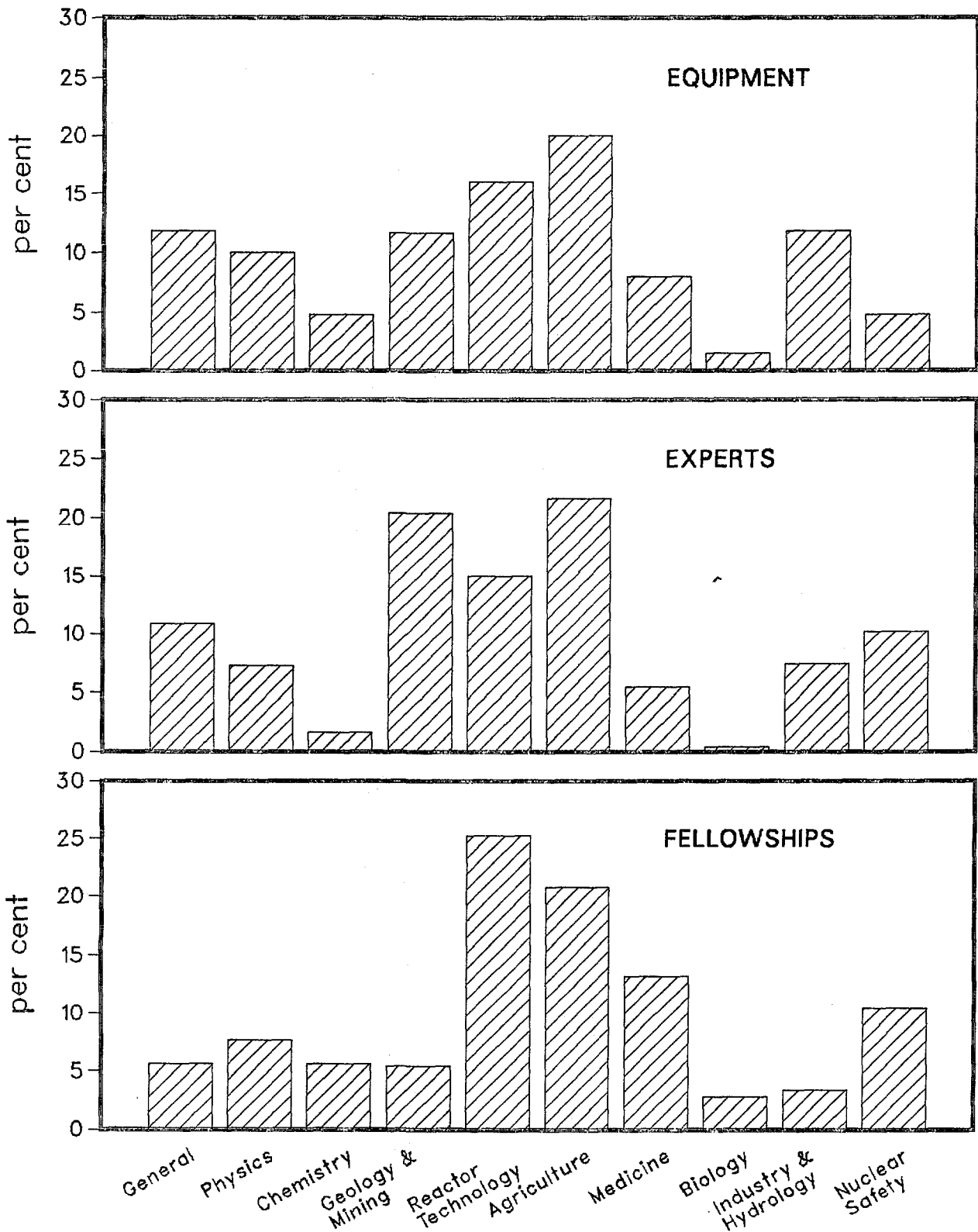
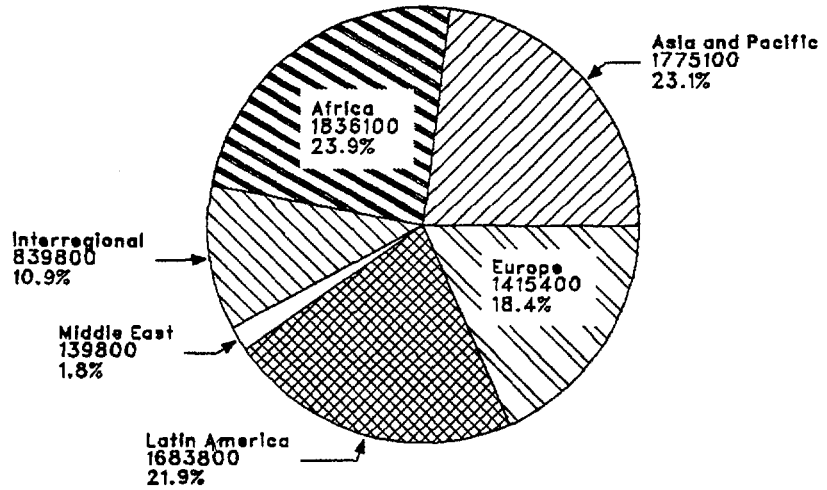


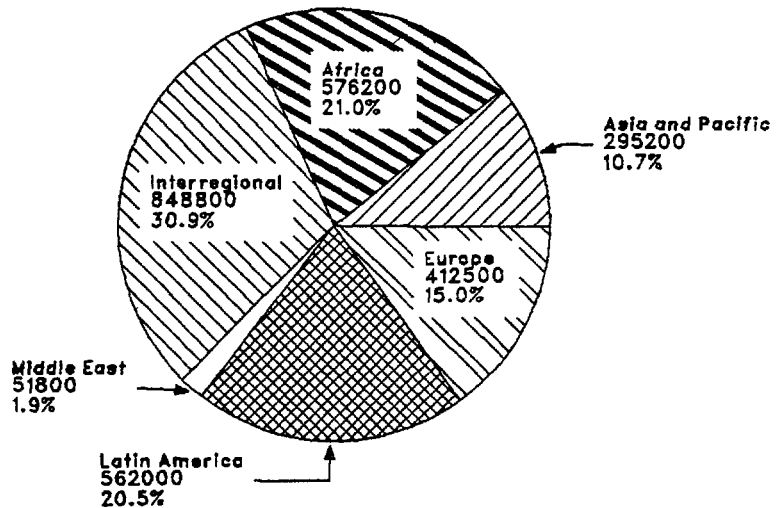
FIGURE 5B

DISTRIBUTION OF AID PROVIDED FROM THE TECHNICAL ASSISTANCE FUND
BY TYPE OF CURRENCY AND REGION, 1981

CONVERTIBLE CURRENCY
7 690 000 DOLLARS



NON-CONVERTIBLE CURRENCY
2 746 500 DOLLARS



TOTAL
10 436 500 DOLLARS

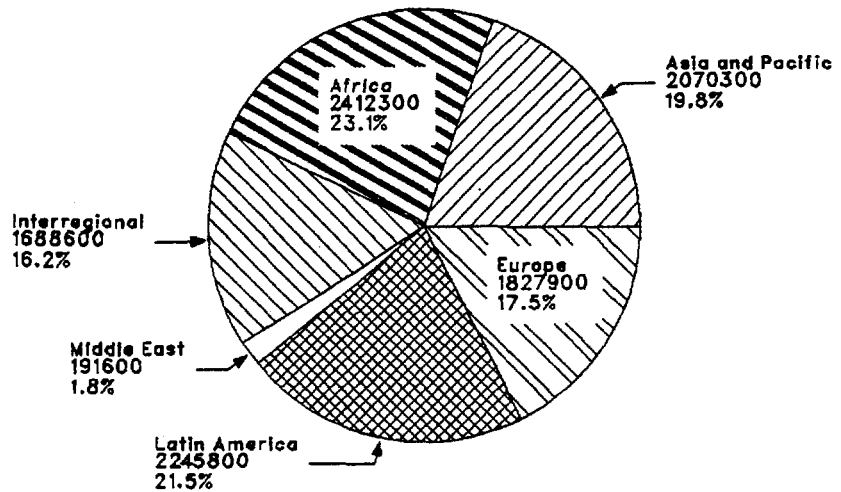
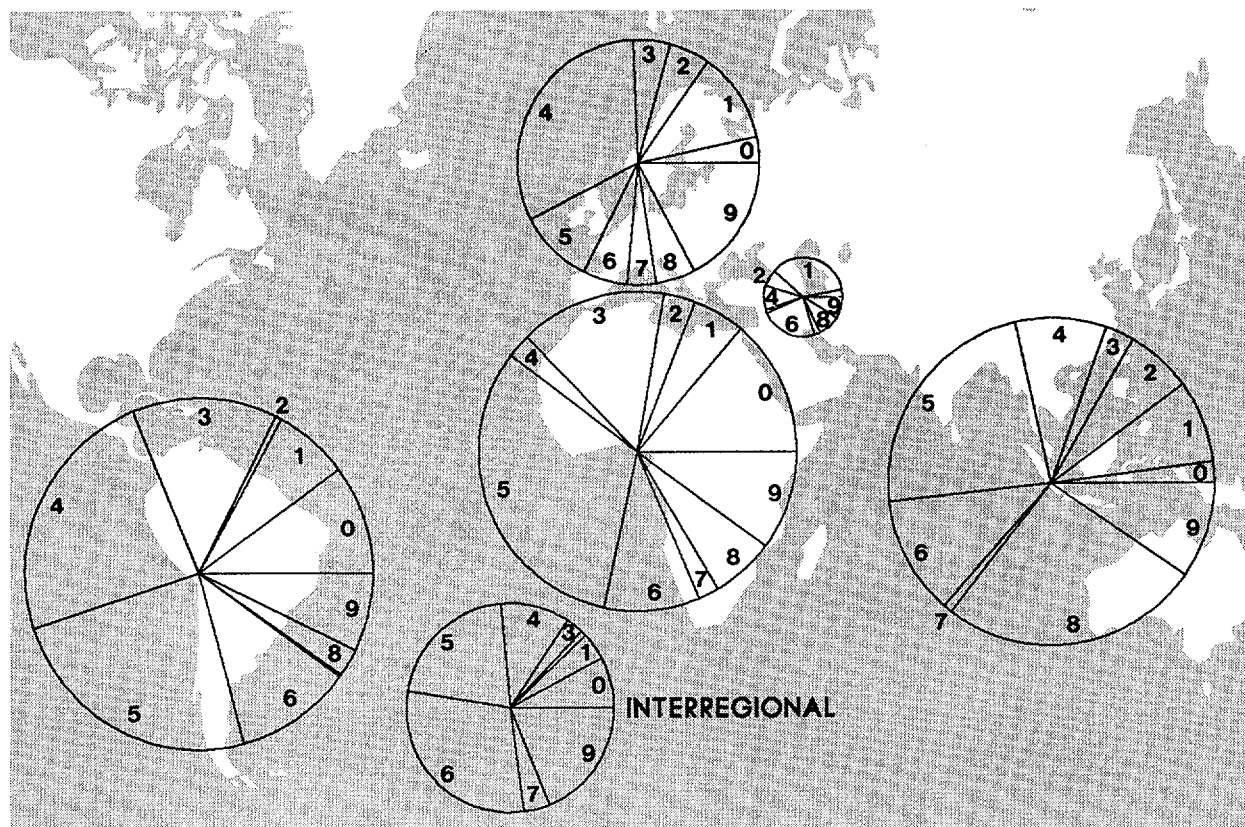


FIGURE 5C

DISTRIBUTION OF TECHNICAL CO-OPERATION INPUTS BY FIELD AND REGION



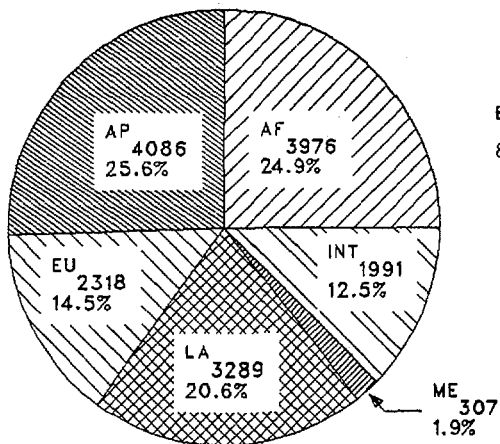
SUMMARY
(in thousands of dollars)

Field of activity	Africa \$	Asia and the Pacific \$	Europe \$	Latin America \$	Middle East \$	Inter- regional \$	All regions \$
0 - General atomic energy development	668.7	106.0	91.3	597.4	9.9	157.2	1 630.5
1 - Nuclear physics	259.2	416.9	330.7	406.6	107.5	86.0	1 606.9
2 - Nuclear chemistry	155.1	340.1	150.7	37.8	21.6	17.9	723.2
3 - Prospecting, mining and processing of nuclear materials	724.0	147.6	138.0	784.7	-	55.1	1 849.4
4 - Nuclear engineering and technology	114.7	469.3	879.1	1 401.4	30.2	216.6	3 111.3
Application of isotopes and radiation in	5 - Agriculture	1 545.7	1 201.8	277.0	1 409.1	4.0	4 260.6
	6 - Medicine	470.7	614.0	167.7	631.2	71.2	2 551.7
	7 - Biology	103.6	46.8	106.3	15.2	7.4	361.1
	8 - Industry and Hydrology	311.4	1 333.9	145.3	150.4	28.3	1 969.3
9 - Safety in nuclear energy	488.9	501.2	478.1	423.9	26.7	377.5	2 296.3
Total	4 842.0	5 177.6	2 764.2	5 857.7	306.8	2 012.0	20 960.3

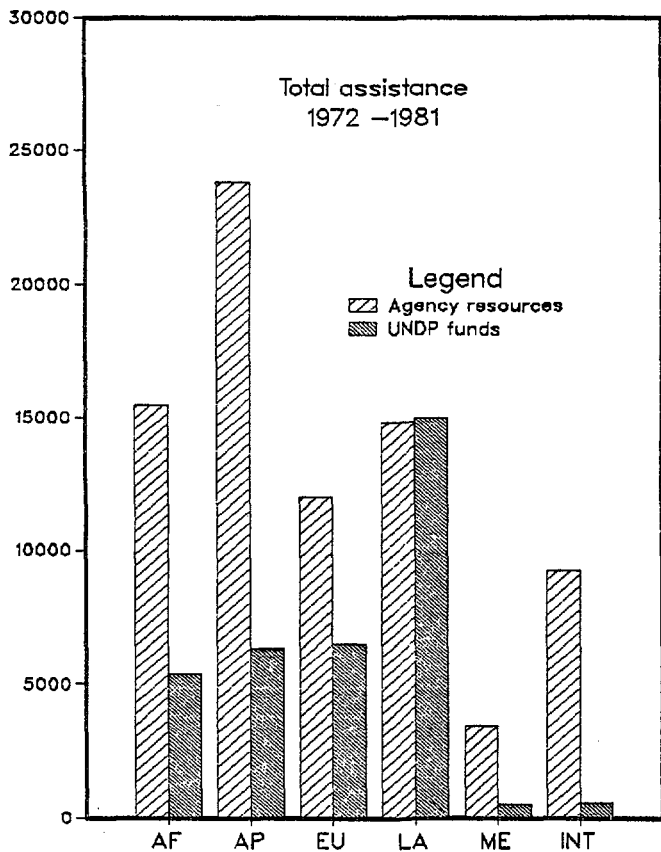
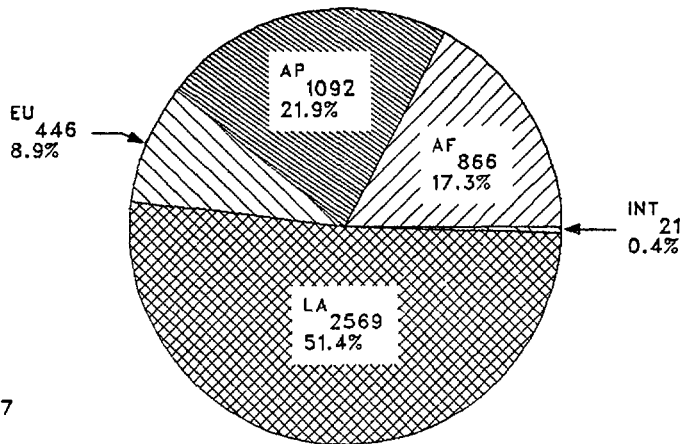
FIGURE 5D

DISTRIBUTION OF TECHNICAL CO-OPERATION INPUTS
BY REGION AND SOURCE
(in thousands of dollars)

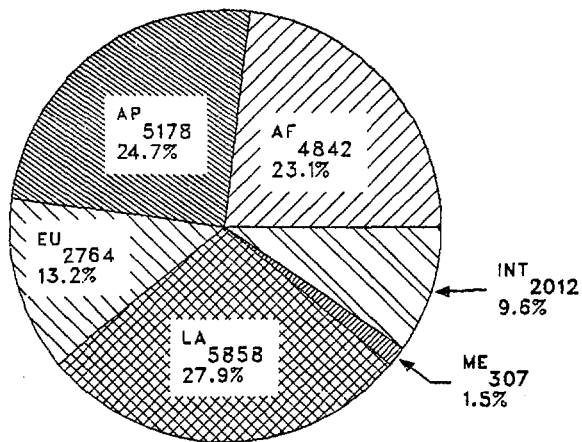
Agency resources



UNDP funds



Total 1981



Abbreviations

- AF = Africa
- AP = Asia and the Pacific
- EU = Europe
- LA = Latin America
- ME = Middle East
- INT = Interregional

FIGURE 6

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

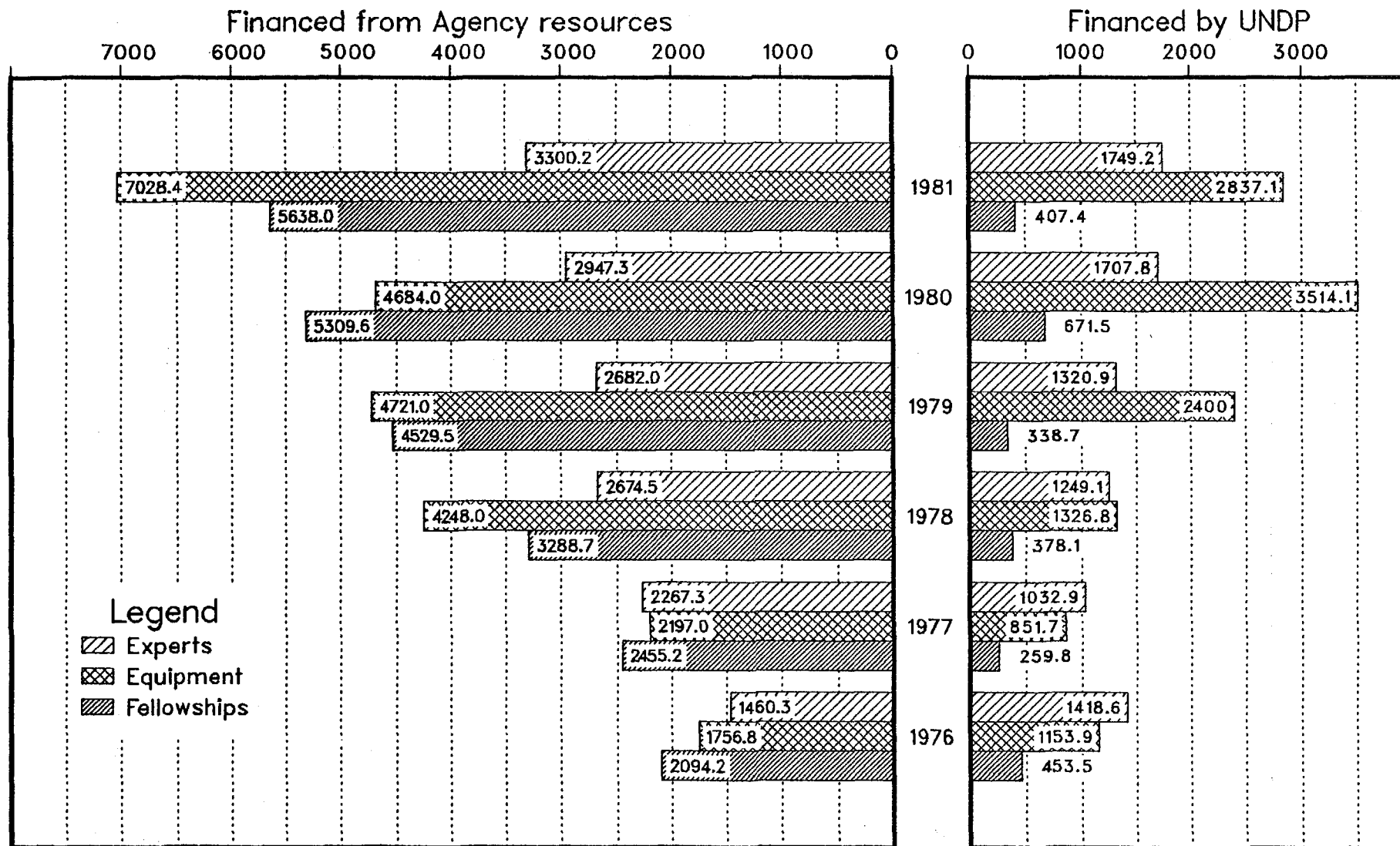


FIGURE 7

STATUS OF IMPLEMENTATION:
UTILIZATION OF THE TECHNICAL ASSISTANCE FUND

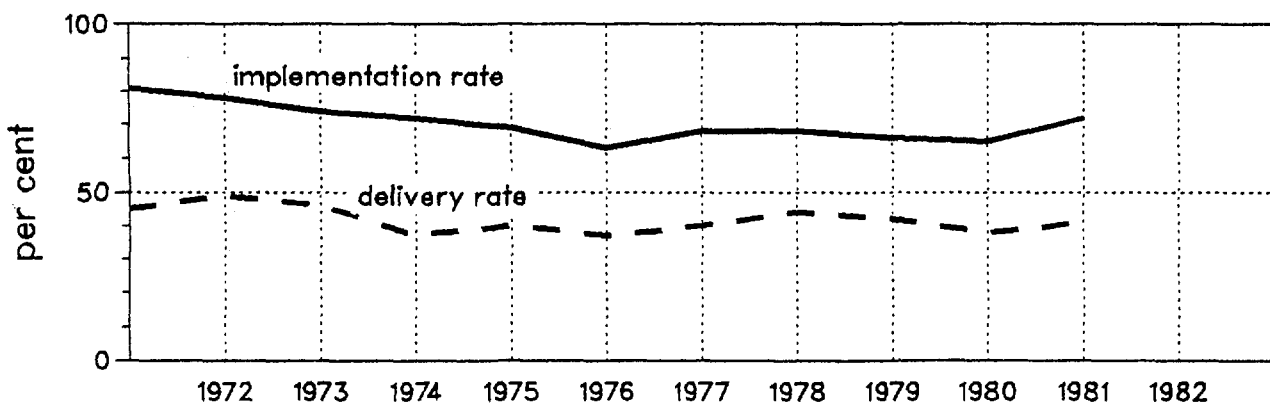
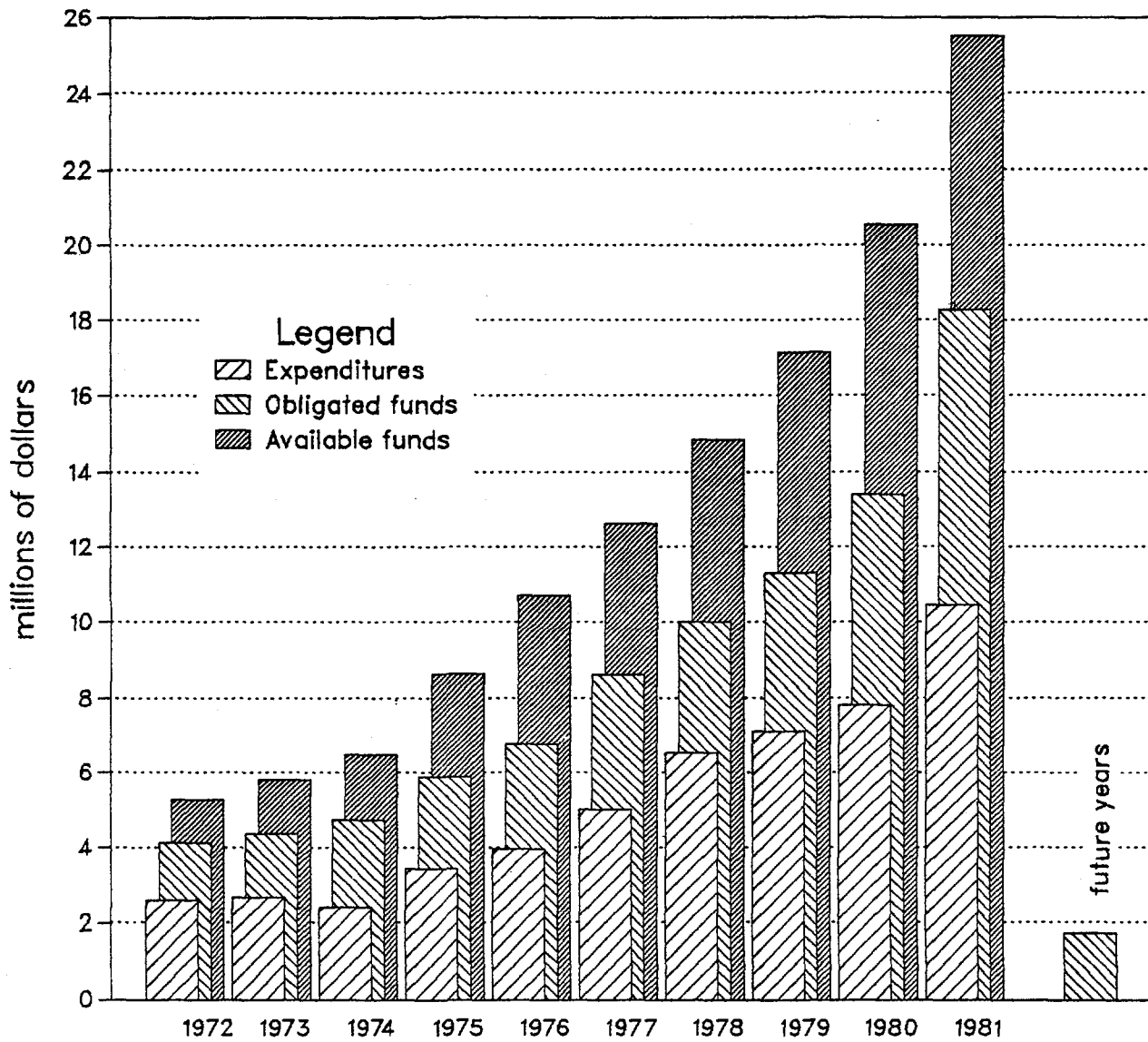


Table 1

Available resources: 1972-1981
(in thousands of dollars)

Year	Technical Assistance Fund				Other Agency resources			UNDP (5)	GRAND TOTAL (4+5) (6)
	Voluntary contributions		Miscellaneous income (1c)	Sub-total (1)	Extrabudgetary funds (2)	Assistance in kind (3)	Agency (1+2+3) (4)		
	Convertible currency (1a)	Non-convertible currency (1b)							
1972	2 122	363	150	2 635	43	779	3 457	2 072	5 529
1973	2 290	557	278	3 125	251	1 039	4 415	1 964	6 379
1974	2 424	661	263	3 348	369	1 078	4 795	3 082	7 877
1975	3 205	1 014	320	4 539	106	942	5 587	3 942	9 529
1976	3 982	1 080	430	5 492	729	1 021	7 242	3 002	10 244
1977	4 307	1 142	513	5 962	2 147	1 284	9 393	2 836	12 229
1978	5 089	1 362	670	7 121	2 860	1 987	11 968	3 205	15 173
1979	6 448	1 614	740	8 802	2 643	2 015	13 460	6 066	19 526
1980	7 978	2 082	573	10 633	2 692	2 628	15 953	5 018	20 971
1981	9 592	2 181	902	12 675	3 645	2 788	19 108	5 186	24 294
1972- 1981	47 437	12 056	4 839	64 332	15 485	15 561	95 378	36 373	131 751

Table 2

Technical Assistance Fund: 1972-1981

Year	Target for voluntary contributions to the Technical Assistance Fund	Amount pledged	Amount actually made available for technical co-operation by programme year ^a
1972	3 000 000	2 485 405	2 635 514
1973	3 000 000	2 847 012	3 124 497
1974	3 000 000	3 084 761	3 347 781
1975	4 500 000	4 219 391	4 539 759
1976	5 500 000	5 061 957	5 492 167
1977	6 000 000	5 449 466	5 962 688
1978	7 000 000	6 450 560	7 120 736
1979	8 500 000	8 062 513	8 802 221
1980	10 500 000	10 060 494	10 632 794
1981	13 000 000	11 772 823	12 674 807

^a Funds from voluntary contributions are supplemented by miscellaneous income; this explains why the amounts shown as actually made available exceed the amounts pledged and, in some years (1973-1975 and 1978-1980), the targets themselves.

Table 3

Experts (classified by place of origin) and trainees in the field
(classified by place of study): 1981

Place of origin of experts or place of study of trainees	Experts			Trainees					TOTAL
	UNDP	Agency	TOTAL	UNDP		Agency			
				Fellows	Training course participants	Fellows	Training course participants	Scientific visitors	
Argentina	3	8	11	1	-	2	11	1	15
Australia	3	2	5	2	-	7	-	-	9
Austria	1	5	6	2	-	3	-	1	6
Belgium	7	7	14	-	-	5	-	3	8
Bolivia	-	1	1	-	-	-	12	-	12
Brazil	1	4	5	2	-	6	-	-	8
Canada	4	18	22	3	-	16	-	3	22
Chile	1	1	2	-	-	2	-	-	2
Colombia	1	2	3	-	-	-	-	-	-
Costa Rica	-	-	-	-	-	1	14	-	15
Cyprus	-	1	1	-	-	-	-	-	-
Czechoslovakia	1	4	5	2	-	6	23	2	33
Denmark	1	2	3	2	-	7	-	-	9
Dominican Republic	-	-	-	-	-	1	-	-	1
Egypt	-	5	5	-	-	-	-	-	-
Finland	-	8	8	-	-	4	-	1	5
France	5	25	30	9	-	35	61	3	108
German D.R.	-	4	4	-	-	2	56	1	59
Germany, F.R.	5	37	42	14	-	39	55	4	112
Greece	-	6	6	-	-	-	-	-	-
Hungary	-	6	6	2	-	8	23	3	36
India	1	16	17	-	-	10	-	1	11
Israel	1	3	4	-	-	1	-	-	1
Italy	4	4	8	-	-	15	-	4	19
Japan	1	2	3	-	13	5	-	2	20
Korea, R.	-	1	1	-	-	-	-	1	1
Malaysia	-	-	-	-	17	-	14	-	31
Mexico	-	3	3	-	-	-	13	-	13
Morocco	-	1	1	-	-	-	16	-	16
Netherlands	1	2	3	2	-	17	-	5	24
New Zealand	-	-	-	1	-	-	-	-	1
Nigeria	-	-	-	-	-	1	-	-	1
Pakistan	-	1	1	-	-	-	-	-	-
Norway	1	2	3	-	-	1	-	-	1
Peru	-	1	1	-	-	-	-	-	-
Philippines	-	1	1	-	-	-	-	-	-
Poland	1	10	11	-	-	5	-	-	5
Portugal	-	1	1	-	-	-	-	-	-
Romania	-	1	1	-	-	2	-	-	2
Spain	2	5	7	5	-	6	17	4	32
Sri Lanka	-	2	2	1	-	-	-	-	1
Sudan	-	1	1	-	-	-	-	1	1
Sweden	2	4	6	2	-	5	-	1	8
Switzerland	1	3	4	1	-	2	-	-	3
Thailand	-	1	1	-	-	-	-	-	-
Turkey	-	7	7	-	-	-	14	-	14
USSR	-	-	-	-	-	6	69	-	75
UK	16	18	34	4	-	68	-	7	79
USA	15	42	57	10	-	211	111	4	336
Uruguay	-	1	1	1	-	-	-	-	1
Yugoslavia	1	5	6	1	-	1	17	1	20
IAEA	6	83	89	9	-	27	11	4	51
Other international organizations	-	8	8	-	-	-	-	-	-
TOTAL	86	375	461	76	30	527	537	57	1227 ^a

^a The difference between the number of trainees (1106) and the number of places of study (1227) is due to the fact that a number of fellows, training course participants and scientific visitors went to more than one country/place.

Table 4
Types of technical co-operation: 1977-1981
(in thousands of dollars)

YEAR AND SOURCE	TYPE	Experts		Equipment		Fellowships		Scientific visits		Training courses		Intercountry projects		Sub-contracts		TOTAL		Assistance outstanding at 31 December 1981		TOTAL (8+9+10)
		(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)	(10)	
		\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	\$	
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		1 841.4	36.8	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		131.8	20.7	149.3	23.4	129.8	20.3	0.2	0.0	227.0	35.6	-	-	-	-	638.1	100.0	-	-	638.1
Assistance in kind		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		2 995.6	33.1	2 800.4	30.9	1 968.0	21.7	118.1	1.3	1 023.3	11.3	-	-	158.5	1.7	9 063.9	100.0	-	-	9 063.9
1978																				
UNDP		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		1 862.9	28.5	2 978.5	45.6	704.8	10.8	101.9	1.6	787.3	12.1	92.1	1.4	-	-	6 527.5	100.0	-	-	6 527.5
Extrabudgetary funds		275.4	16.2	1 115.1	65.7	127.1	8.1	4.6	0.3	164.7	9.7	-	-	-	-	1 696.9	100.0	-	-	1 696.9
Assistance in kind		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		3 342.8	25.4	5 413.6	41.1	2 869.0	21.8	113.8	0.9	1 209.2	9.2	92.1	0.7	124.7	0.9	13 165.2	100.0	-	-	13 165.2
1979																				
UNDP		1 286.0	31.7	1 808.9	44.6	306.8	7.5	-	-	47.4	1.2	4.9	0.1	605.6	14.9	4 059.6	100.0	-	-	4 059.6
Agency		1 782.8	25.0	2 726.5	38.3	823.3	11.5	125.0	1.8	1 618.8	22.7	47.5	0.7	-	-	7 123.9	100.0	-	-	7 123.9
Extrabudgetary funds		378.9	13.5	1 784.3	63.9	339.9	12.2	3.1	0.1	259.0	9.3	-	-	28.6	1.0	2 793.8	100.0	-	-	2 793.8
Assistance in kind		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	-	-	2 014.8
TOTAL		3 515.4	22.0	6 344.5	39.7	3 157.5	19.7	133.6	0.8	2 154.5	13.5	52.4	0.3	634.2	4.0	15 992.1	100.0	-	-	15 992.1
1980																				
UNDP		1 574.4	26.7	3 089.8	52.4	608.2	10.3	-	-	104.8	1.8	102.3	1.8	413.9	7.0	5 893.4	100.0	-	-	5 893.4
Agency		1 999.1	25.6	3 070.1	39.3	1 295.8	16.6	103.1	1.3	1 327.9	17.0	17.7	0.2	-	-	7 813.7	100.0	-	-	7 813.7
Extrabudgetary funds		479.0	19.2	1 412.3	56.5	416.3	16.6	14.3	0.6	170.2	6.8	7.4	0.3	-	-	2 499.5	100.0	-	-	2 499.5
Assistance in kind		88.0	3.3	59.6	2.3	2 258.6	89.8	2.3	0.1	119.2	4.5	-	-	-	-	2 627.7	100.0	-	-	2 627.7
TOTAL		4 140.5	22.0	7 631.8	40.5	4 678.9	24.8	119.7	0.6	1 722.1	9.2	127.4	0.7	413.9	2.2	18 834.3	100.0	-	-	18 834.3
1981																				
UNDP		1 555.8	31.1	1 940.7	38.9	340.8	6.8	-	-	23.7	0.5	1 043.9	20.9	89.8	1.8	4 993.7	100.0	2 405.5	-	7 399.2
Agency		2 205.1	21.1	4 964.3	47.6	1 216.9	11.6	154.0	1.5	1 813.9	17.4	82.3	0.8	-	-	10 436.5	100.0	9 553.1	-	19 989.6
Extrabudgetary funds		517.5	18.9	1 636.5	59.7	236.9	8.6	4.0	0.2	326.9	11.9	1.1	0.0	19.2	0.7	2 742.1	100.0	1 012.4	-	3 754.5
Assistance in kind		121.5	4.4	-	-	2 551.5	91.5	-	-	104.1	3.7	10.9	0.4	-	-	2 788.0	100.0	-	1 367.5	4 155.5
TOTAL		4 399.9	21.0	8 541.5	40.8	4 346.1	20.7	158.0	0.8	2 268.6	10.8	1 138.2	5.4	108.0	0.5	20 960.3	100.0	12 971.0	1 367.5	35 298.8
1977-1981																				
UNDP		6 604.2	33.0	8 828.6	44.0	1 835.3	9.2	-	-	234.4	1.2	1 151.1	5.7	1 391.5	6.9	20 045.1	100.0	2 405.5	-	22 450.6
Agency		9 691.3	26.3	15 396.0	41.7	4 716.6	12.8	598.5	1.6	6 256.7	17.0	239.6	0.6	-	-	36 898.7	100.0	9 553.1	-	46 451.8
Extrabudgetary funds		1 782.6	17.2	6 097.5	58.8	1 260.0	12.1	26.2	0.3	1 147.8	11.1	8.5	0.1	47.8	0.4	10 370.4	100.0	1 012.4	-	11 382.8
Assistance in kind		316.1	3.0	409.7	3.8	9 207.6	86.0	18.5	0.2	738.8	6.9	10.9	0.1	-	-	10 701.6	100.0	-	1 367.5	12 069.1
GRAND TOTAL		18 394.2	23.6	30 731.8	39.4	17 019.5	21.8	643.2	0.8	8 377.7	10.7	1 410.1	1.8	1 439.3	1.9	78 015.8	100.0	12 971.0	1 367.5	92 354.3

Table 5A

Technical Assistance Fund by
programme year and year of expenditure
as at 31 December 1981
(in thousands of dollars)

Programme year	Monetary resources made available	Year of expenditure											Total expenditures 1958-1981	Unliquidated obligations	Earmarkings	Programme savings (deficit)
		1958-1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981				
1958-1971	17 231	14 584	1 723	525	106	57	25	32	-	-	-	-	17 052	-	-	179
1972	2 635	-	833	1 193	458	167	70	38	2	-	1	-	2 762	-	-	(127)
1973	3 125	-	-	958	1 114	616	229	102	45	11	4	-	3 079	-	2	44
1974	3 348	-	-	-	735	1 373	657	287	93	47	24	52	3 268	26	127	(73)
1975	4 539	-	-	-	-	1 211	1 474	850	359	100	66	102	4 162	-	94	283
1976	5 492	-	-	-	-	-	1 500	1 917	1 141	356	111	410	5 435	7	94	(44)
1977	5 962	-	-	-	-	-	-	1 771	2 292	1 237	315	108	5 723	23	135	81
1978	7 121	-	-	-	-	-	-	-	2 595	2 655	775	377	6 402	91	533	95
1979	8 802	-	-	-	-	-	-	-	-	2 718	3 135	1 495	7 348	448	734	272
1980	10 633	-	-	-	-	-	-	-	-	-	3 383	3 929	7 312	2 009	1 897	(585)
1981	12 675	-	-	-	-	-	-	-	-	-	-	3 963	3 963	5 215	3 685	(188)
TOTAL	81 563	14 584	2 556	2 676	2 413	3 424	3 955	4 997	6 527	7 124	7 814	10 436	66 506	7 819^a	7 301^b	(63)

^a Does not include unliquidated obligations totalling \$1 734 000 for future-year components of multi-year projects.

^b The difference between the total earmarkings of \$7 301 000 and the unobligated balance of \$5 504 000 in respect of the Technical Assistance Fund (see Statement III.A of the Agency's Accounts for 1981), namely \$1 797 000, is the sum of \$1 734 000 (mentioned in the above footnote) plus \$63 000, which is the cumulative programme deficit as at 31 December 1981.

Table 5B

Extrabudgetary funds by
programme year and year of expenditure
as at 31 December 1981
(in thousands of dollars)

Programme year	Extra- budgetary funds made available	Year of expenditure												Total expenditures 1958-1981	Unliquidated obligations	Unobligated balance
		1958-1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981			
1958-1970	208	139	43	26	-	-	-	-	-	-	-	-	-	208	-	-
1971	248	-	17	49	9	21	18	9	22	5	5	2	33	190	-	58
1972	43	-	-	11	25	7	-	-	-	-	-	-	-	43	-	-
1973	251	-	-	-	53	79	96	4	19	-	-	-	-	251	-	-
1974	369	-	-	-	-	63	102	173	12	19	-	-	-	369	-	-
1975	106	-	-	-	-	-	37	10	59	-	-	-	-	106	-	-
1976	729	-	-	-	-	-	-	162	197	262	88	1	-	710	-	19
1977	2 147	-	-	-	-	-	-	-	329	998	567	99	37	2 030	19	98
1978	2 860	-	-	-	-	-	-	-	-	413	1 326	1 040	53	2 832	11	17
1979	2 643	-	-	-	-	-	-	-	-	-	808	1 006	465	2 279	87	277
1980	2 692	-	-	-	-	-	-	-	-	-	-	352	1 204	1 556	356	780
1981	3 645 ^a	-	-	-	-	-	-	-	-	-	-	-	950	950	539	2 156
TOTAL	15 941	139	60	86	87	170	253	358	638	1 697	2 794	2 500	2 742	11 524	1 012	3 405

^a Does not include funds totalling \$580 813 in respect of technical assistance activities programmed for 1982, namely \$300 000 from Italy, \$165 613 from Sweden and \$115 200 from the United Kingdom.

TABLE 5C

Extrabudgetary funds for technical co-operation activities by donor
as at 31 December 1981
(in thousands of dollars)

Country	Funds available 1 January 1981	New funds in 1981	Total funds available	Expenditures in 1981	Unliquidated obligations at year-end	Unobligated balance
<u>A. Funds for activities in countries other than donor</u>						
Argentina	312	-	312	312	-	-
Australia	5 638	-	5 638	5 638	-	-
Belgium	135 935	36 999	172 934	89 848	13 781	69 305
Canada	65 037	-	65 037	5 950	2 458	56 629
Denmark	60 000	-	60 000	47 042	50	12 908
Finland	8 000	123 457	131 457	105 182	7 013	19 262
Germany, F.R.	334 611	827 429	1 162 040	453 976	67 308	640 756
Italy	-	551 000	551 000	-	-	551 000
Japan	762	85 000	85 762	16 444	8 481	60 837
Sweden	1 224 082	978 843	2 202 925	740 732	199 065	1 263 128
USSR	91 645 ^a	-	91 645	33 259	525	57 861
UK	-	200 000	200 000	17 699	33 536	148 765
USA	1 639 690	1 224 256	2 863 946	1 141 672	639 276	1 082 998
Sub-total	3 565 712	4 026 984	7 592 696	2 657 754	971 493	3 963 449
<u>B. Funds for activities in donor country</u>						
Brazil	22 323	-	22 323	29 642	-	(7 319)
Ecuador	132	-	132	-	-	132
Libyan A.J.	-	2 500	2 500	1 553	868	79
Madagascar	771	-	771	-	-	771
Nigeria	27 974	-	27 974	235	-	27 739
Portugal	-	40 000	40 000	-	40 000	-
Spain	-	53 000	53 000	52 898	-	102
Uruguay	1 112	-	1 112	-	-	1 112
Sub-total	52 312	95 500	147 812	84 328	40 868	22 616
TOTAL	3 618 024	4 122 484 ^b	7 740 508	2 742 082	1 012 361	3 986 065 ^b

^a Includes exchange loss during 1981.

^b Includes funds totalling \$580 813 in respect of technical assistance activities programmed for 1982, namely \$300 000 from Italy, \$165 613 from Sweden and \$115 200 from the United Kingdom.

Table 6A

Recipients of expert services: 1981

RECIPIENT	Expert assignments, classified by source of funds					
	UNDP		Agency		TOTAL	
	(1)	(2)	(1)	(2)	(1)	(2)
Afghanistan	-	-	1	1.5	1	1.5
Albania	-	-	1	0.5	1	0.5
Algeria	-	-	5	3.0	5	3.0
Argentina	13	48.5	2	1.5	15	50.0
Bangladesh	-	-	10	18.0	10	18.0
Bolivia	-	-	2	2.5	2	2.5
Brazil	12	38.0	20	24.0	32	62.0
Bulgaria	2	2.0	1	1.0	3	3.0
Burma	-	-	4	19.0	4	19.0
Chile	5	4.5	9	18.0	14	22.5
Colombia	11	21.0	3	3.0	14	24.0
Costa Rica	-	-	3	3.0	3	3.0
Cuba	-	-	2	2.0	2	2.0
Cyprus	-	-	2	3.0	2	3.0
Ecuador	-	-	5	18.0	5	18.0
Egypt	1	0.5	23	7.5	24	8.0
El Salvador	-	-	1	5.0	1	5.0
Ethiopia	2	13.0	-	-	2	13.0
Ghana	-	-	3	2.0	3	2.0
Greece	4	12.0	16	17.0	20	29.0
Guatemala	-	-	2	1.5	2	1.5
Hungary	-	-	2	0.5	2	0.5
Iceland	-	-	2	1.5	2	1.5
India	-	-	7	6.0	7	6.0
Indonesia	1	0.5	9	12.5	10	13.0
Iran	-	-	1	2.0	1	2.0
Israel	-	-	1	1.5	1	1.5
Ivory Coast	-	-	4	5.0	4	5.0
Jordan	-	-	1	0.5	1	0.5
Kenya	-	-	2	10.5	2	10.5
Korea, R.	-	-	9	14.0	9	14.0
Libyan A.J.	-	-	4	1.0	4	1.0
Madagascar	5	47.0	2	3.5	7	50.5
Malaysia	-	-	14	19.0	14	19.0
Mali	-	-	1	1.0	1	1.0
Mauritius	-	-	1	2.0	1	2.0
Mexico	-	-	11	25.0	11	25.0
Morocco	1	3.0	7	37.5	8	40.5
Niger	-	-	5	5.5	5	5.5
Nigeria	3	16.5	8	57.0	11	73.5

RECIPIENT	Expert assignments, classified by source of funds					
	UNDP		Agency		TOTAL	
	(1)	(2)	(1)	(2)	(1)	(2)
Panama	-	-	3	3.0	3	3.0
Paraguay	-	-	1	0.5	1	0.5
Peru	10	26.5	9	12.0	19	38.5
Philippines	1	1.0	6	12.0	7	13.0
Portugal	-	-	6	3.0	6	3.0
Romania	8	3.5	1	0.5	9	4.0
Senegal	-	-	4	3.5	4	3.5
Singapore	-	-	2	3.0	2	3.0
Spain	-	-	2	14.0	2	14.0
Sri Lanka	-	-	4	7.0	4	7.0
Sudan	-	-	10	6.0	10	6.0
Thailand	-	-	8	7.0	8	7.0
Tunisia	-	-	2	19.0	2	19.0
Turkey	-	-	13	6.0	13	6.0
U.R. Cameroon	-	-	1	6.0	1	6.0
U.R. Tanzania	-	-	3	10.0	3	10.0
Uruguay	-	-	4	1.5	4	1.5
Venezuela	-	-	4	8.0	4	8.0
Viet Nam	-	-	2	2.0	2	2.0
Yugoslavia	5	2.0	15	9.5	20	11.5
Zaire	3	4.5	4	3.0	7	7.5
Zambia	-	-	6	16.0	6	16.0
Sub-total	87	244.0	316	509.0	403	753.0
Intercountry projects	3	13.0	7	4.5	10	17.5
Training courses	7	6.5	167	74.0	174	80.5
Sub-total	10	19.5	174	78.5	184	98.0
GRAND TOTAL	97	263.5	490	587.5	587	851.0

(1) Number of expert assignments.

(2) Number of man-months served.

Table 6B

Recipients of training abroad: 1981

RECIPIENT	UNDP				Agency						TOTAL	
	Fellows		Training course participants		Fellows		Scientific visitors		Training course participants		(1)	(2)
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)		
Afghanistan	-	-	-	-	1	2	-	-	3	5	4	7.0
Albania	2	1	-	-	-	-	-	-	-	-	2	1.0
Algeria	-	-	-	-	7	22	-	-	6	9	13	31.0
Argentina	2	8	-	-	1	4	-	-	-	-	3	12.0
Bangladesh	-	-	3	3	20	122	1	0.5	-	-	24	125.5
Benin	-	-	-	-	-	-	-	-	1	2	1	2.0
Bolivia	-	-	-	-	2	20	-	-	6	11	8	31.0
Brazil	11	67	-	-	9	21	-	-	23	34	43	122.0
Bulgaria	9	23	-	-	11	52	-	-	16	19	36	94.0
Burma	-	-	-	-	1	5	-	-	-	-	1	5.0
Central African R.	-	-	-	-	-	-	-	-	2	1	2	1.0
Chile	2	6	-	-	7	33	-	-	2	2	11	41.0
Colombia	4	3	-	-	10	69	-	-	6	9	20	81.0
Costa Rica	-	-	-	-	2	24	-	-	6	8	8	32.0
Cuba	2	12	-	-	5	28	-	-	2	2	9	42.0
Cyprus	-	-	-	-	2	6	-	-	2	3	4	9.0
Czechoslovakia	-	-	-	-	10	44	-	-	20	32	30	76.0
Dem. P.R. Korea	-	-	-	-	8	67	-	-	7	9	15	76.0
Dominican Republic	-	-	-	-	-	-	-	-	6	10	6	10.0
Ecuador	-	-	-	-	4	31	-	-	10	13	14	44.0
Egypt	-	-	-	-	24	155	1	1.0	21	31	46	187.0
El Salvador	-	-	-	-	3	18	-	-	3	5	6	23.0
Ethiopia	2	11	-	-	4	30	1	0.5	-	-	7	41.5
Gabon	-	-	-	-	-	-	-	-	1	2	1	2.0
Ghana	1	8	-	-	25	185	1	1.0	3	3	30	197.0
Greece	1	2	-	-	7	27	-	-	8	13	16	42.0
Guatemala	-	-	-	-	-	-	-	-	1	1	1	1.0
Hungary	-	-	-	-	14	88	4	3.0	10	14	28	105.0
Iceland	-	-	-	-	3	36	-	-	-	-	3	36.0
India	-	-	4	4	10	55	-	-	10	15	24	74.0
Indonesia	-	-	4	5	8	37	1	1.0	10	13	23	56.0
Iraq	-	-	-	-	4	32	-	-	10	15	14	47.0
Israel	-	-	-	-	4	24	-	-	4	4	8	28.0
Ivory Coast	-	-	-	-	-	-	-	-	2	1	2	1.0
Jamaica	-	-	-	-	-	-	-	-	1	2	1	2.0
Jordan	-	-	-	-	6	17	-	-	6	8	12	25.0
Kenya	-	-	-	-	14	87	-	-	3	6	17	93.0
Korea, R.	-	-	2	2	13	86	-	-	4	5	19	93.0
Lebanon	-	-	-	-	1	3	-	-	1	1	2	4.0
Libyan A.J.	-	-	-	-	1	3	-	-	1	1	2	4.0
Madagascar	1	1	-	-	4	23	-	-	5	7	10	31.0
Malaysia	-	-	1	1	10	45	1	0.5	9	13	21	59.5
Mali	-	-	-	-	9	42	2	1.0	5	5	16	48.0
Mauritius	-	-	-	-	-	-	-	-	1	1	1	1.0
Mexico	-	-	-	-	1	3	-	-	17	28	18	31.0
Mongolia	-	-	-	-	-	-	-	-	1	2	1	2.0
Morocco	-	-	-	-	3	14	-	-	8	13	11	27.0
Niger	-	-	-	-	-	-	-	-	2	1	2	1.0
Nigeria	-	-	-	-	15	80	-	-	-	-	15	80.0
Pakistan	-	-	3	3	26	119	-	-	10	13	39	135.0
Panama	-	-	-	-	1	12	-	-	3	6	4	18.0
Paraguay	-	-	-	-	5	24	-	-	3	5	8	29.0
Peru	12	52	-	-	9	56	1	0.5	11	17	33	125.5
Philippines	2	4	2	2	20	100	2	1.0	9	12	35	119.0
Poland	-	-	-	-	20	125	1	1.0	12	20	33	146.0

RECIPIENT	UNDP				Agency							
	Fellows		Training course participants		Fellows		Scientific visitors		Training course participants		TOTAL	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Portugal	-	-	-	-	7	21	3	2.0	8	13	18	36.0
Romania	3	16	-	-	1	9	-	-	7	12	11	37.0
Senegal	-	-	-	-	1	5	-	-	3	5	4	10.0
Sierra Leone	-	-	-	-	2	22	-	-	-	-	2	22.0
Singapore	-	-	1	1	-	-	-	-	3	5	4	6.0
Spain	-	-	-	-	-	-	-	-	6	9	6	9.0
Sri Lanka	-	-	4	4	14	104	2	1.5	11	16	31	125.5
Sudan	-	-	-	-	11	76	-	-	5	7	16	83.0
Syrian A.R.	-	-	-	-	1	4	1	0.5	5	6	7	10.5
Thailand	-	-	5	5	36	208	3	2.0	20	25	64	240.0
Togo	-	-	-	-	-	-	-	-	1	2	1	2.0
Tunisia	-	-	-	-	1	4	-	-	4	3	5	7.0
Turkey	-	-	-	-	29	158	5	3.0	19	25	53	186.0
Uganda	-	-	-	-	3	19	-	-	1	1	4	20.0
U.R. Cameroon	-	-	-	-	-	-	-	-	2	2	2	2.0
U.R. Tanzania	-	-	-	-	9	70	-	-	3	5	12	75.0
Uruguay	-	-	-	-	4	16	-	-	8	13	12	29.0
Venezuela	-	-	-	-	1	4	-	-	16	26	17	30.0
Viet Nam	-	-	1	1	4	36	-	-	11	15	16	52.0
Yugoslavia	2	1	-	-	13	70	-	-	14	22	29	93.0
Zaire	4	21	-	-	3	19	-	-	6	8	13	48.0
Zambia	-	-	-	-	13	92	1	0.5	2	4	16	96.5
TOTAL	60	236	30	31	517	3013	31	20.5	468	676	1106	3976.5

(1) Number of trainees. (2) Number of man-months of training received.

Table 7

Financial summary: 1981
(in thousands of dollars)

RECIPIENT	Assistance provided, by type				Assistance provided, by source						Unliquidated obligations as at 31 December 1981	TOTAL (8) + (9)
	Experts	Equip-ment	Fellow-ships	TOTAL	UNDP	Convertible currency	Non-convertible currency	Extra-budgetary funds	In kind	TOTAL		
	(1)	(2)	(3)	(4)	(5)	(6a)	(6b)	(6c)	(7)	(8)		
Afghanistan	32.0	3.4	3.3	38.7	-	38.7	-	-	-	38.7	164.5	203.2
Albania	2.8	20.9	3.4	27.1	0.9	26.2	-	-	-	27.1	82.3	109.4
Algeria	11.8	17.0	27.9	56.7	-	36.3	-	-	20.4	56.7	112.5	169.2
Argentina	394.8	416.1	12.5	823.4	774.0	42.9	-	-	6.5	823.4	221.8	1 045.2
Bangladesh	9.0	93.6	165.4	268.0	-	75.4	10.5	87.8	94.3	268.0	240.1	508.1
Bolivia	4.1	178.8	27.6	210.5	-	90.0	26.5	69.4	24.6	210.5	186.0	396.5
Brazil	419.4	288.1	114.9	822.4	546.9	121.8	-	122.0	31.7	822.4	210.0	1 032.4
Bulgaria	11.0	168.0	94.6	273.6	97.5	143.2	7.9	-	25.0	273.6	255.9	529.5
Burma	70.3	68.8	6.0	145.1	-	111.6	28.0	-	5.5	145.1	99.5	244.6
Chile	157.2	287.3	64.9	509.4	300.7	191.3	-	-	17.4	509.4	115.3	624.7
Colombia	117.3	264.9	92.6	474.8	223.9	141.0	50.5	-	59.4	474.8	108.3	583.1
Costa Rica	16.2	6.5	35.5	58.2	-	18.2	-	4.5	35.5	58.2	60.7	118.9
Cuba	16.8	657.7	41.1	715.6	106.0	130.6	448.3	-	30.7	715.6	1 419.4	2 135.0
Cyprus	16.4	46.5	8.2	71.1	-	56.9	8.9	-	5.3	71.1	5.2	76.3
Czechoslovakia	-	0.7	64.9	65.6	-	34.0	-	8.7	22.9	65.6	739.1	804.7
Dem. P.R. Korea	-	175.3	81.1	256.4	-	92.3	83.0	12.9	68.2	256.4	234.7	491.1
Dominican Republic	-	-	-	-	-	-	-	-	-	-	10.3	10.3
Ecuador	121.6	10.4	44.7	176.7	-	124.0	-	10.0	42.7	176.7	919.0	1 095.7
Egypt	45.8	459.3	204.2	709.3	21.2	112.4	327.4	98.7	149.6	709.3	1 042.4	1 751.7
El Salvador	18.9	36.9	27.9	83.7	-	55.8	-	-	27.9	83.7	9.9	93.6
Ethiopia	63.6	70.4	37.0	171.0	141.6	24.1	-	-	5.3	171.0	71.7	242.7
Ghana	11.7	93.8	263.6	369.1	21.8	119.6	-	32.3	195.4	369.1	118.4	487.5
Greece	141.5	93.8	43.9	279.2	69.3	157.8	-	29.1	23.0	279.2	207.6	486.8
Guatemala	7.8	8.6	0.1	16.5	-	11.4	-	0.9	4.2	16.5	7.6	24.1
Hong Kong	-	-	3.4	3.4	-	3.4	-	-	-	3.4	0.5	3.9
Hungary	0.7	326.6	92.1	419.4	-	86.7	326.1	-	6.6	419.4	468.9	888.3
Iceland	6.4	0.1	46.7	53.2	-	21.9	-	-	31.3	53.2	25.8	79.0
India	0.6	22.5	56.2	79.3	20.0	24.6	-	-	34.7	79.3	28.0	107.3
Indonesia	59.8	107.3	63.1	230.2	2.7	130.7	0.8	60.6	35.4	230.2	113.9	344.1
Iran	5.9	1.1	-	7.0	-	7.0	-	-	-	7.0	3.9	10.9
Iraq	-	18.0	49.5	67.5	-	35.6	0.5	-	31.4	67.5	24.0	91.5
Israel	8.0	45.0	35.7	88.7	-	53.7	-	-	35.0	88.7	10.1	98.8
Ivory Coast	24.9	45.0	-	69.9	-	69.9	-	-	-	69.9	6.0	75.9
Jamaica	-	11.2	-	11.2	-	11.2	-	-	-	11.2	35.6	46.8
Jordan	0.8	96.3	36.9	134.0	-	38.7	50.3	12.8	32.2	134.0	10.7	144.7
Kenya	59.9	127.3	117.1	304.3	-	147.6	13.1	105.6	38.0	304.3	54.7	359.0
Korea, R.	123.3	76.6	139.3	339.2	-	134.2	-	82.4	122.6	339.2	146.0	485.2
Lebanon	-	-	3.7	3.7	-	-	-	3.7	-	3.7	-	3.7
Libyan A.J.	3.8	9.2	10.1	23.1	7.3	11.2	-	1.6	3.0	23.1	14.9	38.0
Madagascar	323.1	63.7	27.4	414.2	319.1	75.2	-	1.6	18.3	414.2	203.4	617.6
Malaysia	94.7	100.3	69.2	264.2	-	143.6	21.7	34.7	64.2	264.2	230.0	494.2
Mali	9.4	56.9	67.9	134.2	-	78.2	-	7.9	48.1	134.2	52.3	186.5
Mauritius	11.7	1.8	-	13.5	-	12.0	1.5	-	-	13.5	1.7	15.2
Mexico	155.3	5.5	4.2	165.0	-	96.0	-	69.0	-	165.0	132.0	297.0
Mongolia	-	22.5	-	22.5	-	18.0	4.5	-	-	22.5	88.1	110.6
Morocco	196.0	59.6	22.2	277.8	15.8	193.1	21.8	26.9	20.2	277.8	48.9	326.7
Niger	27.0	11.9	2.8	41.7	-	41.7	-	-	-	41.7	25.8	67.5
Nigeria	173.4	19.1	113.6	306.1	111.8	97.0	-	0.2	97.1	306.1	61.4	367.5
Pakistan	15.1	162.6	175.2	352.9	-	153.7	85.2	3.2	110.8	352.9	262.2	615.1
Panama	13.4	23.0	18.0	54.4	-	31.0	-	5.4	18.0	54.4	9.7	64.1
Paraguay	2.7	8.8	31.3	42.8	-	23.6	-	-	19.2	42.8	10.4	53.2
Peru	254.7	654.6	166.1	1 075.4	617.5	213.7	16.7	147.3	80.2	1 075.4	304.6	1 380.0
Philippines	103.7	155.3	159.9	418.9	26.0	210.7	5.1	69.0	108.1	418.9	389.0	807.9
Poland	2.7	41.1	137.6	181.4	-	142.2	-	1.4	37.8	181.4	213.8	395.2
Portugal	12.4	0.1	38.4	50.9	-	33.6	1.4	-	15.9	50.9	214.7	265.6
Romania	26.5	302.5	28.2	357.2	106.1	237.5	-	-	13.6	357.2	187.6	544.8
Saudi Arabia	-	1.3	-	1.3	-	1.3	-	-	-	1.3	-	1.3
Senegal	19.8	65.3	3.9	89.0	17.9	57.7	(0.6)	14.0	-	89.0	67.1	156.1
Sierra Leone	-	48.2	29.4	77.6	-	27.1	34.8	-	15.7	77.6	26.2	103.8
Singapore	9.4	89.5	11.3	110.2	-	105.4	-	4.8	-	110.2	91.1	201.3
Spain	98.1	-	0.7	98.8	-	45.9	-	52.9	-	98.8	15.5	114.3
Sri Lanka	38.5	117.1	141.1	296.7	0.1	144.8	12.6	79.9	59.3	296.7	194.1	490.8
Sudan	33.9	148.8	91.6	274.3	-	139.4	41.5	46.4	47.0	274.3	66.2	340.5
Syrian A.R.	1.0	0.2	5.3	6.5	-	5.5	1.0	-	-	6.5	7.0	13.5
Thailand	47.7	310.7	306.4	664.8	-	210.2	-	239.1	215.5	664.8	247.4	912.2

RECIPIENT	Assistance provided, by type				Assistance provided, by source						Unliquidated obligations as at 31 December 1981	TOTAL (8) + (9)
	Experts	Equip-ment	Fellow-ships	TOTAL	UNDP	Convertible currency	Non-convertible currency	Extra-budgetary funds	In kind	TOTAL		
	(1)	(2)	(3)	(4)	(5)	(6a)	(6b)	(6c)	(7)	(8)		
Tunisia	124.0	103.4	5.8	233.2	-	152.2	30.8	44.4	5.8	233.2	40.2	273.4
Turkey	31.6	229.5	217.5	478.6	-	224.1	68.3	20.7	165.5	478.6	231.9	710.5
Uganda	-	-	24.3	24.3	-	6.3	-	-	18.0	24.3	35.7	60.0
U.A. Emirates	4.3	-	-	4.3	-	4.3	-	-	-	4.3	-	4.3
U.R. Cameroon	27.2	19.0	-	46.2	-	46.2	-	-	-	46.2	-	46.2
U.R. Tanzania	35.7	104.2	98.7	238.6	-	143.8	56.0	-	38.8	238.6	113.6	352.2
Uruguay	13.8	115.2	21.3	150.3	-	59.2	20.1	53.3	17.7	150.3	129.4	279.7
Venezuela	63.6	116.6	13.2	193.4	-	150.2	-	43.2	-	193.4	72.1	265.5
Viet Nam	10.2	137.6	39.4	187.2	-	116.5	43.7	-	27.0	187.2	163.5	350.7
Yugoslavia	50.6	254.9	96.9	402.4	172.6	199.2	-	29.0	1.6	402.4	439.5	841.9
Zaire	73.4	216.0	61.9	351.3	205.4	87.3	0.2	34.5	23.9	351.3	54.6	405.9
Zambia	80.9	87.6	108.6	277.1	-	147.6	49.6	9.7	70.2	277.1	82.8	359.9
Sub-total	4 169.6	8 207.4	4 458.4	16 835.4	3 926.1	6 606.9	1 897.7	1 781.5	2 623.2	16 835.4	12 098.7	28 934.1
<u>Intercountry projects</u>												
Asia and the Pacific	173.3	835.3	46.2	1 054.8	1 043.9	-	-	-	10.9	1 054.8	29.6	1 084.4
Latin America	5.4	10.1	-	15.5	-	15.5	-	-	-	15.5	2.1	17.6
Interregional	18.6	49.3	-	67.9	-	39.8	27.0	1.1	-	67.9	52.2	120.1
<u>Training courses</u>												
Africa	-	-	5.2	5.2	3.6	1.6	-	-	-	5.2	-	5.2
Asia and the Pacific	43.5	11.0	17.8	72.3	(1.2)	45.7	-	23.2	4.6	72.3	10.6	82.9
Latin America	63.7	94.2	91.6	249.5	-	147.3	-	93.6	8.6	249.5	83.9	333.4
Interregional	294.9	263.0	1 379.4	1 937.3	17.0	797.5	821.8	210.2	90.8	1 937.3	469.2	2 406.5
Interregional (IFSTD)	2.7	0.6	1.0	4.3	4.3	-	-	-	-	4.3	113.7	118.0
Sub-total	602.1	1 263.5	1 541.2	3 406.8	1 067.6	1 047.4	848.8	328.1	114.9	3 406.8	761.3	4 168.1
<u>SIDA large-scale assistance</u>												
Bangladesh	32.0	15.5	18.1	65.6	-	-	-	65.6	-	65.6	59.4	125.0
India	35.7	231.0	24.8	291.5	-	-	-	290.6	0.9	291.5	37.8	329.3
<u>Other multi-bilateral assistance</u>												
Nigeria	196.1	129.2	-	325.3	-	-	-	276.3	49.0	325.3	13.8	339.1
Miscellaneous	13.9	18.9	2.9	35.7	-	35.7	-	-	-	35.7	-	35.7
GRAND TOTAL	5 049.4	9 865.5	6 045.4	20 960.3	4 993.7	7 690.0	2 746.5	2 742.1	2 788.0	20 960.3	12 971.0	33 931.3

Table 8
Financial summary: 1958-1981
(in thousands of dollars)

RECIPIENT	Assistance provided, by type				Assistance provided, by source				
	Experts	Equip-ment	Fellow-ships	TOTAL	UNDP	Agency funds	Extra-budgetary funds ^a	In kind	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6a)	(6b)	(7)	(8)
Afghanistan	343.9	226.2	120.5	690.6	92.9	515.9	-	81.8	690.6
Albania	52.4	409.1	45.7	507.2	118.4	368.3	-	20.5	507.2
Algeria	60.0	41.5	111.4	212.9	21.7	152.3	-	38.9	212.9
Argentina	2 571.0	1 542.8	1 086.6	5 200.4	3 049.5	1 598.0	17.5	535.4	5 200.4
Austria	62.0	13.8	120.7	196.5	-	132.6	-	63.9	196.5
Bangladesh	160.7	498.8	873.7	1 533.2	55.7	777.5	139.1	560.9	1 533.2
Bolivia	265.3	572.9	204.0	1 042.2	153.4	573.7	174.6	140.5	1 042.2
Brazil	3 524.6	2 923.7	1 459.6	7 907.9	5 418.3	1 704.8	276.5	508.3	7 907.9
Bulgaria	72.9	808.5	950.6	1 832.0	412.5	1 049.3	-	370.2	1 832.0
Burma	703.3	640.4	199.5	1 543.2	537.0	903.7	-	102.5	1 543.2
Chad	116.3	30.6	-	146.9	146.9	-	-	-	146.9
Chile	2 142.7	1 809.6	1 053.4	5 005.7	3 572.7	1 080.8	-	352.2	5 005.7
China	229.7	166.2	554.9	950.8	281.5	307.7	-	361.6	950.8
Colombia	692.3	1 327.3	472.1	2 491.7	1 265.6	725.8	-	500.3	2 491.7
Costa Rica	299.8	455.2	137.9	892.9	-	515.0	213.6	164.3	892.9
Cuba	236.4	1 735.9	157.2	2 129.5	576.4	1 420.9	21.3	110.9	2 129.5
Cyprus	88.1	199.2	51.5	338.8	24.1	261.2	-	53.5	338.8
Czechoslovakia	-	1.3	782.3	783.6	6.2	406.4	12.9	358.1	783.6
Dem. P.R. Korea	4.3	317.5	109.4	431.2	-	318.8	15.9	96.5	431.2
Dominican Republic	13.0	8.3	6.7	28.0	-	21.3	3.9	2.8	28.0
Ecuador	433.0	404.7	172.5	1 010.2	35.5	607.6	170.3	196.8	1 010.2
Egypt	563.0	1 966.2	1 609.9	4 139.1	1 023.4	1 898.7	123.4	1 093.6	4 139.1
El Salvador	74.5	109.5	74.9	258.9	14.1	102.1	20.4	122.3	258.9
Ethiopia	340.4	200.5	122.1	663.0	374.8	249.6	-	38.6	663.0
Gabon	3.7	-	-	3.7	-	3.7	-	-	3.7
Ghana	402.4	705.1	1 342.4	2 449.9	269.0	1 034.3	205.4	941.2	2 449.9
Greece	1 778.9	669.4	936.7	3 385.0	1 544.9	1 124.7	152.5	562.9	3 385.0
Guatemala	100.5	209.8	48.0	358.3	56.2	166.1	45.0	91.0	358.3
Hong Kong	59.9	102.5	26.1	188.5	-	179.5	-	9.0	188.5
Hungary	87.2	2 350.3	1 004.8	3 442.3	622.7	2 533.0	8.0	278.6	3 442.3
Iceland	50.3	258.9	98.9	408.1	-	307.6	-	100.5	408.1
India	818.1	2 375.3	2 152.2	5 345.6	2 920.3	1 250.2	29.8	1 145.3	5 345.6
Indonesia	1 064.9	879.5	846.0	2 790.4	489.6	1 528.8	202.3	569.7	2 790.4
Iran	650.1	73.1	446.6	1 169.8	455.4	448.0	2.4	264.0	1 169.8
Iraq	380.3	819.0	729.5	1 928.8	242.5	1 269.7	25.0	391.6	1 928.8
Israel	257.8	804.8	438.7	1 501.3	170.9	885.6	18.0	426.8	1 501.3
Ivory Coast	172.2	154.4	11.0	337.6	73.4	240.3	23.9	-	337.6
Jamaica	118.0	116.8	24.0	258.8	10.4	177.6	-	70.8	258.8
Jordan	261.8	349.9	185.5	797.2	89.3	508.1	100.6	99.2	797.2
Kenya	310.7	373.5	278.0	962.2	33.2	589.9	210.8	128.3	962.2
Korea, R.	1 054.3	938.5	1 591.6	3 584.4	566.8	1 428.8	413.5	1 175.3	3 584.4
Kuwait	12.0	-	3.9	15.9	-	15.9	-	-	15.9
Lebanon	247.8	140.7	96.7	485.2	139.3	291.3	31.4	23.2	485.2
Liberia	115.2	29.0	-	144.2	60.2	27.7	-	56.3	144.2
Libyan A.J.	92.1	163.0	82.0	337.1	7.3	283.6	1.6	44.6	337.1
Madagascar	761.9	749.9	78.2	1 590.0	860.0	452.9	243.4	33.7	1 590.0
Malaysia	477.4	581.7	477.6	1 536.7	1.6	844.5	303.0	387.6	1 536.7
Mali	316.4	249.4	121.3	687.1	13.4	566.9	40.2	66.6	687.1
Mauritius	17.5	41.3	3.8	62.6	-	58.8	3.8	-	62.6
Mexico	1 341.2	471.2	327.4	2 139.8	419.3	1 268.8	247.7	204.0	2 139.8
Mongolia	62.1	384.2	17.2	463.5	-	446.3	10.6	6.6	463.5
Morocco	1 203.1	742.4	223.2	2 168.7	900.1	985.3	93.5	189.8	2 168.7
Nicaragua	26.5	7.6	20.1	54.2	-	54.2	-	-	54.2
Niger	52.1	64.5	17.3	133.9	-	119.4	-	14.5	133.9
Nigeria	1 002.0	399.7	410.0	1 811.7	853.6	558.9	82.5	316.7	1 811.7
Niue	7.8	6.9	-	14.7	14.7	-	-	-	14.7
Pakistan	1 392.9	1 690.4	2 007.9	5 091.2	1 842.0	2 010.9	80.7	1 157.6	5 091.2
Panama	83.7	41.3	114.3	239.3	4.1	118.9	11.0	105.3	239.3
Paraguay	58.8	119.0	76.8	254.6	-	119.1	94.1	41.4	254.6
Peru	1 340.1	2 021.7	598.8	3 960.6	2 077.3	1 086.4	348.7	448.2	3 960.6

RECIPIENT	Assistance provided, by type				Assistance provided, by source				
	Experts	Equip- ment	Fellow- ships	TOTAL	UNDP	Agency funds	Extra- budgetary funds ^a	In kind	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6a)	(6b)	(7)	(8)
Philippines	1 060.6	1 418.5	1 994.4	4 473.5	1 034.1	1 556.1	424.2	1 459.1	4 473.5
Poland	47.2	456.5	1 407.6	1 911.3	199.7	1 215.4	1.4	494.8	1 911.3
Portugal	113.2	233.4	118.9	465.5	-	323.5	61.2	80.8	465.5
Romania	613.5	2 256.8	715.7	3 586.0	1 905.5	1 420.8	39.3	220.4	3 586.0
St. Kitts	-	-	8.5	8.5	-	-	8.5	-	8.5
Saudi Arabia	28.1	8.6	12.8	49.5	-	42.5	-	7.0	49.5
Senegal	209.3	382.1	115.7	707.1	104.4	441.6	114.7	46.4	707.1
Sierra Leone	212.3	101.6	86.3	400.2	174.5	123.7	12.4	89.6	400.2
Singapore	146.9	404.0	62.9	613.8	-	556.2	4.8	52.8	613.8
Somalia	6.3	-	-	6.3	6.3	-	-	-	6.3
Spain	302.5	-	65.7	368.2	-	292.2	52.9	23.1	368.2
Sri Lanka	497.6	904.1	717.2	2 118.9	297.2	1 265.8	222.1	333.8	2 118.9
Sudan	445.1	719.9	645.8	1 810.8	296.7	1 122.4	185.6	206.1	1 810.8
Syrian A.R.	146.7	235.8	238.9	621.4	229.6	317.5	4.5	69.8	621.4
Thailand	1 087.7	1 068.1	1 807.5	3 963.3	545.5	1 712.8	468.0	1 237.0	3 963.3
Tunisia	534.9	324.1	167.3	1 026.3	141.2	749.2	54.9	81.0	1 026.3
Turkey	1 307.9	1 199.7	1 713.6	4 221.2	1 628.7	1 418.8	41.6	1 132.1	4 221.2
Uganda	260.8	198.8	66.1	525.7	131.0	361.1	-	33.6	525.7
U.A. Emirates	16.8	-	-	16.8	-	16.8	-	-	16.8
U.R. Cameroon	324.9	139.3	44.2	508.4	297.3	181.9	22.4	6.8	508.4
U.R. Tanzania	130.2	217.8	137.2	485.2	9.6	422.8	2.4	50.4	485.2
Uruguay	361.3	807.8	185.5	1 354.6	173.6	729.5	213.0	238.5	1 354.6
Venezuela	410.1	239.5	238.4	888.0	130.7	509.0	65.9	182.4	888.0
Viet Nam	89.9	535.4	182.2	807.5	31.4	593.9	-	182.2	807.5
Yugoslavia	637.7	2 346.0	1 289.5	4 273.2	2 516.8	1 251.1	155.3	350.0	4 273.2
Zaire	408.1	558.1	347.3	1 313.5	302.9	703.7	89.6	217.3	1 313.5
Zambia	514.5	287.7	236.2	1 038.4	152.5	724.6	15.5	145.8	1 038.4
Other countries ^b	160.6	48.7	780.3	989.6	116.1	447.1	-	426.4	989.6
Sub-total	39 306.0	50 586.7	38 699.3	128 592.0	42 343.4	57 177.7	6 479.0	22 591.9	128 592.0
<u>Interregional projects and training courses</u>									
Africa	148.5	96.5	132.0	377.0	328.9	43.2	-	4.9	377.0
Asia and the Pacific	918.7	1 017.3	556.5	2 492.5	1 907.9	366.3	88.1	130.2	2 492.5
Europe	21.0	18.6	17.3	56.9	56.9	-	-	-	56.9
Latin America	881.0	889.8	320.8	2 091.6	1 458.2	317.3	219.6	96.5	2 091.6
Middle East	5.8	1.2	5.3	12.3	12.3	-	-	-	12.3
Interregional	2 562.7	1 168.8	8 148.7	11 880.2	1 462.3	8 334.0	848.7	1 235.2	11 880.2
Sub-total	4 537.7	3 192.2	9 180.6	16 910.5	5 226.5	9 060.8	1 156.4	1 466.8	16 910.5
<u>SIDA large-scale assistance</u>									
Bangladesh	362.4	439.1	191.2	992.7	-	-	640.7	352.0	992.7
India	99.9	993.4	231.8	1 325.1	-	-	1 324.2	0.9	1 325.1
<u>Other multi-bilateral assistance</u>									
Nigeria	514.8	406.3	-	921.1	-	-	770.1	151.0	921.1
Miscellaneous	163.2	119.4	8.3	290.9	23.2	267.7	-	-	290.9
GRAND TOTAL	44 984.0	55 737.1	48 311.2	149 032.3	47 593.1	66 506.2	10 370.4	24 562.6	149 032.3

^a The assistance provided from extrabudgetary funds prior to 1977 is included under assistance in kind.

^b Includes the following countries which have not received technical assistance during the last ten or more years: Democratic Kampuchea, Denmark, Finland, France, the Federal Republic of Germany, Haiti, Italy, Japan, Monaco, the Netherlands, New Zealand, Norway, South Africa, Sweden, Switzerland, the United States of America and Zimbabwe.

A N N E X I

UTILIZATION OF EXTRABUDGETARY AND IN-KIND CONTRIBUTIONS

A. Assistance for activities in countries other than donor
(in thousands of dollars)

Donor	Assistance provided, by source										TOTAL
	Extrabudgetary funds					In-kind donations					
	Experts	Equipment	Fellowships	Other training	Sub-total	Experts	Equipment	Fellowships	Other training	Sub-total	
Argentina	-	0.3	-	-	0.3	8.4	-	19.3	24.0	51.7	52.0
Australia	-	5.6	-	-	5.6	1.8	-	-	-	1.8	7.4
Austria	-	-	-	-	-	-	-	5.5	-	5.5	5.5
Belgium	19.0	70.9	-	-	89.9	-	-	27.1	0.6	27.7	117.5
Brazil	-	-	-	-	-	-	-	50.6	1.6	52.2	52.2
Canada	5.8	0.1	-	-	5.9	6.3	-	-	10.9	17.2	23.1
Colombia	-	-	-	-	-	-	-	-	4.5	4.5	4.5
Czechoslovakia	-	-	-	-	-	-	-	68.2	2.9	71.1	71.1
Denmark	-	-	-	47.1	47.1	1.0	-	34.6	-	35.6	82.6
Finland	17.9	87.3	-	-	105.2	-	-	-	-	-	105.2
France	-	-	-	-	-	4.8	-	127.7	15.8	148.3	148.3
Germany, F.R.	116.9	290.4	-	46.7	454.0	18.8	-	205.7	7.2	231.7	685.7
Greece	-	-	-	-	-	-	-	-	1.9	1.9	1.9
Hungary	-	-	-	-	-	-	-	44.2	1.4	45.6	45.6
India	-	-	-	-	-	1.9	-	51.4	-	53.3	53.3
Israel	-	-	-	-	-	-	-	1.8	-	1.8	1.8
Italy	-	-	-	-	-	2.9	-	59.9	1.9	64.7	64.7
Japan	0.7	-	-	15.7	16.4	5.5	-	41.5	-	47.0	63.4
Korea, R.	-	-	-	-	-	2.4	-	-	-	2.4	2.4
Mexico	-	-	-	-	-	-	-	-	1.9	1.9	1.9
Netherlands	-	-	-	-	-	-	-	37.0	-	37.0	37.0
Philippines	-	-	-	-	-	-	-	-	1.4	1.4	1.4
Poland	-	-	-	-	-	-	-	40.2	-	40.2	40.2
Romania	-	-	-	-	-	-	-	23.4	-	23.4	23.4
Singapore	-	-	-	-	-	1.8	-	-	-	1.8	1.8
Spain	-	-	-	-	-	-	-	29.7	5.2	34.9	34.9
Sweden	119.4	246.5	207.6	167.2	740.7	0.9	-	-	-	0.9	741.6
Switzerland	-	-	-	-	-	0.8	-	-	0.7	1.5	1.5
USSR	-	-	33.3	-	33.3	-	-	-	-	-	33.3
UK	-	17.7	-	-	17.7	49.0	-	80.6	6.8	136.4	154.1
USA	172.9	918.6	-	50.2	1 141.7	26.1	-	1 589.9	5.3	1 621.3	2 763.0
Yugoslavia	-	-	-	-	-	-	-	13.2	-	13.2	13.2
Sub-total	452.6	1 637.4	240.9	326.9	2 657.8	132.4	-	2 551.5	94.0	2 777.9	5 435.5
Organizations											
CEC	-	-	-	-	-	-	-	-	0.6	0.6	0.6
IBRD	-	-	-	-	-	-	-	-	1.6	1.6	1.6
UN-DNRE	-	-	-	-	-	-	-	-	1.4	1.4	1.4
WHO	-	-	-	-	-	-	-	-	6.5	6.5	6.5
Sub-total	-	-	-	-	-	-	-	-	10.1	10.1	10.1
GRAND TOTAL	452.6	1 637.4	240.9	326.9	2 657.8	132.4	-	2 551.5	104.1	2 788.0	5 445.8

B. Assistance for activities in donor country
(in thousands of dollars)

Source of funds	Project title and code	Assistance provided		
		Experts	Equipment	TOTAL
Brazil	Raw materials prospection BRA/3/005	29.6	-	29.6
Libyan A.J.	Nuclear research centre LIB/0/004	1.6	-	1.6
Nigeria	Nuclear physics NIR/1/003	-	0.2	0.2
Spain	Nuclear power safety SPA/9/004	52.9	-	52.9
TOTAL		84.1	0.2	84.3

A N N E X I I

TRAINING COURSES AND STUDY TOURS: 1981

Project title and code	Place(s) and dates	Source of funds	Participation ^a			Amount allotted ^b
			(1)	(2)	(3)	
Interregional training course on electric system expansion planning (WASP) INT/0/025	Argonne, Illinois, USA 5 January - 6 March	Agency	23	-	-	54 000(CC)
Regional training course on the design, use and maintenance of nuclear medical equipment RLA/6/007	San José, Costa Rica 8 January - 13 March	Agency	14	-	4	70 000(CC)
Interregional training course on physical protection of nuclear facilities and materials INT/0/024	Albuquerque, New Mexico, USA 27 January - 18 February	USA	16	9	-	60 000(CC)
Interregional training course on safety analysis review INT/9/030	Argonne, Illinois, USA 23 March - 23 May	Agency	29	-	-	73 300(CC)
Interregional training course on the use of isotope and radiation techniques in studies on soil/plant relationships INT/5/073	Seibersdorf, Austria 6 April - 5 June	SIDA	11	6	-	60 900(CC)
Regional "train the trainers" workshop on the maintenance of nuclear instruments RAS/8/010	Kuala Lumpur, Malaysia 13 April - 23 May	UNDP	17	-	8	65 000(CC)
Study tour on the utilization of low-energy accelerators INT/1/019	Hungary, Czechoslovakia, German Democratic Republic and USSR 2 - 31 May	Agency	23	-	-	16 700(CC) 125 000(NCC)
Interregional training course on the role of nuclear energy within a national energy plan INT/0/026	Madrid, Spain 11 May - 27 June	Agency	17	2	2	46 000(CC)
Interregional training course on risk prevention in the use of radiation and nuclear installations INT/9/029	Saclay, France 18 May - 19 June	Agency	26	-	-	60 000(CC)
Interregional training course on the use of nitrogen-15 in soil science and plant nutrition INT/5/075	Leipzig, German Democratic Republic 19 May - 12 June	Agency	17	-	-	23 000(CC) 39 000(NCC)
Interregional training course and study tour on the application of nuclear techniques in agriculture INT/5/076	Moscow, Leningrad, Kiev, Kishinev, Tashkent and Samarkand, USSR 25 May - 21 June	Agency	23	-	-	25 000(CC) 160 000(NCC)
Interregional training course on uranium ore processing INT/3/009	Ljubljana, Yugoslavia 25 May - 26 June	Agency	17	-	-	62 000(CC)

Project title and code	Place(s) and dates	Source of funds	Participation ^a			Amount allotted ^b
			(1)	(2)	(3)	
Interregional advanced training course on the use of radioisotopes and radiation in animal production research with particular reference to mineral nutrition INT/5/074	Lalahan, Turkey 1 - 30 June	Agency and DANIDA	14	-	6	1 000(CC) 60 000(CC)
Interregional training course on radiation protection and nuclear safety INT/9/033	Buenos Aires, Argentina 8 June - 31 July	Agency	11	16	15	34 000(CC)
Interregional training course on the use of radiation equipment in soil moisture and irrigation studies INT/5/077	Cadarache, France 22 June - 10 July	Agency	18	-	-	35 000(CC)
Interregional training course on the use of isotopes and radiation in integrated pest management with special reference to the sterile-insect technique INT/5/078	Gainesville, Florida, USA 29 June - 21 August	Agency and USA	14	1	-	65 000(CC) 3 000(CC)
Interregional training course on nuclear electronics INT/4/055	Berlin (West) 20 July - 16 October	Agency and Federal Republic of Germany	16	-	-	101 800(CC) 19 200(CC)
Interregional training course on nuclear electronics INT/4/053	Rabat, Morocco 17 August - 9 October	Agency	16	-	3	76 000(CC)
Interregional training course on nuclear fuel cycle management INT/4/056	Saclay, France 1 - 30 September	Agency	17	-	-	35 000(CC)
Interregional training course for radiation protection officers in regulatory bodies INT/9/027	Berlin, German Democratic Republic 2 September - 2 October	Agency	16	-	-	20 000(CC) 45 000(NCC)
Interregional training course on nuclear power plant operational safety INT/9/032	Karlsruhe, Federal Republic of Germany 7 September - 23 October	Agency	24	-	-	70 000(CC)
Regional training course on uranium exploration RLA/3/003	La Paz and Mina Cotaje, Bolivia 28 September - 30 October	Agency	12	-	4	79 000(CC)
Interregional training course on siting of nuclear power plants INT/9/031	Argonne, Illinois, USA 28 September - 20 November	Agency	29	-	-	70 000(CC)
Interregional training course and study tour on the application of nuclear methods in medicine INT/6/024	Moscow, Kiev, Kishinev, Erevan and Tashkent, USSR 1 October - 30 November	Agency	23	1	-	20 000(CC) 160 000(NCC)

Project title and code	Place(s) and dates	Source of funds	Participation ^a			Amount allotted ^b
			(1)	(2)	(3)	
Regional training course on the practical use of radioisotope techniques in industry for process and quality control RAS/8/009	Kuala Lumpur, Malaysia 12 October - 13 November	Agency and Federal Republic of Germany	14	-	12	85 000(CC) 8 000(CC)
Interregional training course on the calibration of dosimeters for radiation therapy and radiation protection INT/9/028	Neuherberg, Federal Republic of Germany 19 October - 13 November	Agency	15	9	-	35 000(CC)
Regional training course on the use of isotope and radiation techniques in studies on soil/plant relationships RLA/5/013	Irapuato, Mexico 3 November - 11 December	Agency and SIDA	13	-	3	40 000(CC) 63 600(CC)
Regional workshop on the maintenance of nuclear instruments for industrial applications RAS/8/011	Tokyo, Japan 5 - 25 November	UNDP	13	-	-	40 000(CC)

^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 their Government, or of another organization or programme; and those under (3) denote the number of local participants. No stipends or international travel costs were paid out of project funds in respect of participants shown under (2) and (3).

^b The amounts (in US dollars) do not include expenditures by host Governments in respect of local lecturers, or expenditures for laboratory, lecture room and other facilities.

A N N E X I I I

FORMAL REPORTS SUBMITTED TO RECIPIENT COUNTRY GOVERNMENTS

Recipient country	Subject (Project code)	Author	Reference no. ^a (IAEA/)	Distr. status ^b
Afghanistan	Nuclear science (AFG/1/004)	Maripuu, S.	TA-1777	D
Albania	X-ray fluorescence analysis and applications (Institute of Nuclear Physics) (ALB/4/002)	Valkovic, V.	TA-1742	D
Algeria	Installation of a nuclear metallurgy laboratory at the Nuclear Science and Technology Centre (ALG/0/004)	Krishnan, R.	TA-1760 (French)	D
Argentina	Neutron radiography (ARG/1/022)	Schuelken, H.H.	TA-1743	R
	Diffusion properties in transition metals and metal oxides (ARG/4/048)	Le Claire, A.	TA-1784	R
	High-temperature fatigue and fracture in nuclear materials (ARG/4/057)	Pettersson, K.R.	TA-1745	D
	X-ray fluorescence analysis (ARG/4/059)	Birks, L.S.	TA-1837	S
	Fatigue at high temperatures (ARG/4/064)	Topper, T.H.	TA-1775	R
	Mechanical properties of fuel cladding (ARG/4/074)	Steinberg, E.P.	TA-1831	R
	Radiation protection/health physics	Gollnick, D.A.	UNDP-ARG/78/020-04	D
	Reactor calculus	Stamm'ler, R.J.J.	UNDP-ARG/78/020-05	D
	Thermal aspects of reactors	Raichura, R.C.	UNDP-ARG/78/020-06	D
Reactor physics	Casali, F.	UNDP-ARG/78/020-07	D	
Bangladesh	Plant pathology	Mitra, D.K.	SIDA-BGD/5/003-14	S
Brazil	Equilibrium of uranium ores and geological materials (BRA/3/007)	Duval, J.S.	TA-1824	D
	Entomology (BRA/5/009)	Seawright, J.A.	TA-1797	D
	Development of radiation-attenuated vaccines (BRA/5/009)	Duncan, J.L.	TA-1821	D
	Nuclear power plant safety analysis: Inspection of electrical/instrumentation equipment (BRA/9/012)	Finkel, A.	TA-1825	R
	Radiological protection (BRA/9/014)	Ganguly, A.K.	TA-1739	R
	Simulator design documentation	Chadha, R.	UNDP-BRA/76/003-06	S

Recipient country	Subject (Project code)	Author	Reference no. ^a (IAEA/)	Distr. status ^b
Bulgaria	Nuclear instrumentation	Slapa, M.	UNDP-BUL/77/013-04	S
	Ion implantation techniques	Wilson, I.H.	UNDP-BUL/77/013-05	D
Burma	Neutron physics/chemistry (BUR/1/009)	Gijbels, R.H.	TA-1763	D
	Neutron physics/chemistry (BUR/1/009)	Parus, J.L.	TA-1819	S
	Nuclear physics/chemistry (BUR/1/009)	Iyengar, T.S.	TA-1841	S
Chad	Prospection for nuclear raw materials: Project findings and recommendations	Morante, V.	UNDP-CHD/79/001-02 (French)	S
Chile	Uranium prospection (CHI/3/005)	Meyer, S.P.	TA-1830	R
	Uranium prospection - Phase I: Conclusions and recommendations	Moxham, R.L.	UNDP-CHI/74/005-FR (Spanish)	D
	Seismology	Lomnitz, C.	UNDP-CHI/76/008-05 (Spanish)	S
	Feasibility of a multi-purpose nuclear centre	Oltra Oltra, F.	UNDP-CHI/76/008-06 (Spanish)	D
	Nuclear power plant siting	Arabasz, W.	UNDP-CHI/76/008-07	D
	Aerial radiometry	Duval, J.S.	UNDP-CHI/79/001-01	D
	Economic geology	Baniczky, G.L.	UNDP-CHI/79/001-02	S
	Geochemical prospection	Grimbert, A.	UNDP-CHI/79/001-03 (Spanish)	S
Colombia	Irradiated vaccines against parasites (COL/5/005)	Holmes, P.H.	TA-1826	D
	Prospection for radioactive minerals: Project Manager's interim report	Tauchid, M.	UNDP-COL/76/031-04 (Spanish)	R
Costa Rica	Uranium prospection (COS/3/002)	Ortega Furlotti, A.	TA-1804 (Spanish)	D
Cuba	Radioimmunoassay (CUB/6/006)	Stupnicki, R.	TA-1799	D
	Borehole drilling (CUB/8/003)	Ferronsky, V.I.	TA-1749 (Spanish)	D
Cyprus	Nuclear techniques in agriculture (CYP/5/011)	Gunther, F.A.	TA-1805	D
Ecuador	Soil physics (ECU/0/002)	Libardi, P.L.	TA-1832	S
	Secondary standards dosimetry laboratory (ECU/1/003)	Ruden, B.I.	TA-1766	D
	Uranium prospection (ECU/3/004)	Premoli, C.	TA-1756	R
	Radioimmunoassay (ECU/6/004)	England, B.G.	TA-1836	S

Recipient country	Subject (Project code)	Author	Reference no. ^a (IAEA/)	Distr. status ^b
Egypt	Installation of an optical emission spectrometer for ¹⁵ N analysis in agricultural research (EGY/5/006)	Reinhardt, R.	TA-1770	D
	Calibration visit to secondary standards dosimetry laboratories (INT/1/014)	Lerch, I.A.	TA-1748	R
	Industrial radiation processing	McLaughlin, W.L.	UNDP-EGY/78/011-01	S
Ethiopia	Animal parasitology	Lalic, R.S.	UNDP-ETH/78/005-02	S
Ghana	Establishment of a centre for nuclear agriculture at the Kwabenya Nuclear Research Establishment (GHA/5/007)	Bole, J.B. Micke, A. Van Kooij, J.G.	TA-1752	D
	Application of the sterile insect technique to control or eradicate species of tsetse (GHA/5/009)	Offori, E.D.	TA-1834	D
	Calibration visit to the secondary standards dosimetry laboratory (INT/1/014)	Lerch, I.A.	TA-1757	D
Greece	Neutron moisture meter (GRE/5/012)	Barrada, Y.A.	TA-1809	D
	Hospital physics (GRE/6/005)	Jurvin, E.O.	TA-1786	D
	NUSS siting mission (GRE/9/008)	Franzen, F.L. Giuliani, P. Karbassioun, A. Soffer, L.	TA-1787	D
	Reactor safety (GRE/9/008)	Gifford, F.A.	TA-1792	D
	NUSS mission: Governmental organization (GRE/9/008)	Andres, H. Fechner, J.B. Ha-Vinh, P. Rabold, H. Vuorinen, A.P.	TA-1820	D
	Laboratory investigations on uraniferous rocks from northern Greece	Kurat, G.	UNDP-GRE/79/004-01	S
Guatemala	Nuclear planning (GUA/0/004)	Radicella, R.	TA-1829 (Spanish)	D
India	Animal mineral nutrition	Giese, W.W.	SIDA-IND/5/010-04	D
	Status report of the General Consultant	Fredricksson, L.	SIDA-IND/5/010-05	R
	Isotopes in hydrology	Dincer, T.M.	SIDA-IND/5/010-06	D
Indonesia	Radioisotopes in poultry nutrition (INS/5/017)	Kallfelz, F.A.	TA-1755	D
	Radiovulcanization technology	Laizier, J.	UNDP-INS/78/075-02	S
Iran	Quality control of radioisotopes (IRA/2/002)	Mani, R.S.	TA-1803	D

Recipient country	Subject (Project code)	Author	Reference no. ^a (IAEA/)	Distr. status ^b
Ivory Coast	Nuclear science laboratory (IVC/0/002)	Dolnicar, J.	TA-1762	D
Korea, R.	A specialized training programme for nuclear power (ROK/9/013)	Kanter, M.A.	TA-1835	S
Libyan, A.J.	Programming mission (LIB/0/004)	Dolnicar, J. Hammond, S.B.	TA-PM10	S
Madagascar	Assessment of the uranium potential of the Antsirabe and Folakara regions	Carrie, R.	UNDP-MAG/77/012-02 (French)	S
Malaysia	Isotopes in medicine (MAL/6/006)	Overman, R.T.	TA-1768	D
Mali	Application of nuclear techniques in hydrology (MLI/8/002)	Dincer, T.M.	TA-1818 (French)	S
Mauritius	The use of ¹⁵ N-labelled fertilizer in sugar cane research (MAR/5/003)	Ernst, D.E.W.	TA-1791	S
Mexico	Nuclear manpower training (MEX/0/004)	Hammond, S.B. Montes Ponce, J. Rogers, L.R. Skjoeldebrand, R.	TA-1801 (Spanish)	D
	Isotopes in hydrology (MEX/8/009)	Payne, B.	TA-1746	D
	Power reactor safety (MEX/9/018)	Calvo, J.A.	TA-1813	D
Morocco	Regulations for the maintenance of electronic equipment at the geology laboratory (MOR/4/005)	Lamproye, M.	TA-1814 (French)	S
	Reactor systems design	Kreiner, H.J.	UNDP-MOR/73/019-02 (French)	S
	Preparation of preliminary safety analysis report	Boeck, H.	UNDP-MOR/73/019-03 (French)	S
Niger	Use of isotopes in hydrology (NER/8/002)	Fontes, J.C.	TA-1839 (French)	S
	Study of the Air mountain range (NER/8/003)	Zuppi, G.M.	TA-1771 (French)	S
	Application of nuclear techniques in hydrology (NER/8/003)	Zuppi, G.M.	TA-1817 (French)	R
	Radiation protection in the mining and processing of radioactive minerals (NER/9/004)	Ahmed, J. Daw, H.	TA-1823 (French)	D
Nigeria	Radiation safety requirements for Ahmadu Bello University, Zaria, with special reference to the proposed central radioisotope laboratory (NIR/7/002)	Tait, G.W.C.	TA-1761	D

Recipient country	Subject (Project code)	Author	Reference no. ^a (IAEA/)	Distr. status ^b
Nigeria	Calibration visit to the secondary standards dosimetry laboratory (INT/1/014)	Lerch, I.A.	TA-1759	D
	Animal parasitology	Holmes, P.H.	UNDP-NIR/72/005-03	S
Pakistan	Uranium prospection (PAK/3/005)	Stipanivic, P.N.	TA-1754	R
	Prospection for nuclear raw materials (PAK/3/005)	Carlisle, D.	TA-1800	R
	Uranium ore processing (PAK/3/006)	Cecchetto, A.M.	TA-1808	R
Panama	Programming mission	Tauchid, M. Vavrejn, B. Vera Ruiz, H. Willstaetter, P.	TA-PM8 (Spanish)	S
Peru	Nuclear instrumentation (PER/0/010)	Tiitta, A.T.	TA-1845 (Spanish)	S
	Labelled compounds (PER/6/006)	Montestruque B., S.	TA-1833 (Spanish)	S
	Reproduction of domestic ruminants	Bindon, B.M.	UNDP-PER/76/002-05	D
Philippines	Nuclear electronics (PHI/4/013)	Marr, J.D.	TA-1781	D
Poland	Activation analysis (POL/2/006)	Bock-Werthmann, W.	TA-1764	D
Portugal	Nuclear power programme (POR/0/003)	Raisic, N.	TA-1802	R
	Uranium prospection (POR/3/002)	Juliao, B.	TA-1807	R
	Nuclear power safety (POR/9/002)	Doury, A.C.	TA-1785 (French)	R
	Radioecology (POR/9/002)	Saas, A.A.	TA-1795 (French)	R
	Nuclear power safety (POR/9/002)	Platthaus, D.	TA-1810	D
Senegal	Estimation of average water and mineral losses in millet cultivation (SEN/5/011)	Vachaud, G.	TA-1765 (French)	S
Sri Lanka	Use of radioisotopes in agriculture (SRL/5/010)	David, D.J.	TA-1737	D
	Pest control (SRL/5/014)	LaBrecque, G.	TA-1767	D
	Crop water and soil management (SRL/5/016)	Halstead, E.H.	TA-1843	S
Sudan	X-ray fluorescence analysis and applications (Applied Nuclear Science Laboratory, University of Khartoum) (SUD/0/006)	Valkovic, V.	TA-1838	S
	Behaviour and fate of pesticides in vegetable crops (SUD/5/012)	Lindquist, D.A.	TA-1816	S

Recipient country	Subject (Project code)	Author	Reference no. ^a (IAEA/)	Distr. status ^b
Sudan	Medical uses of radionuclides (SUD/6/009)	Dudley, R.A.	TA-1772	S
	Isotope techniques in hydrology (SUD/8/003)	Gonfiantini, R.	TA-1794	S
	Calibration visit to the secondary standards dosimetry laboratory (INT/1/014)	Lerch, I.A.	TA-1758	D
Thailand	Nuclear technology training (THA/4/007)	Wacks, M.E.	TA-1738	D
	Pesticide residues (THA/5/021)	Schoellhammer, H.	TA-1840	S
	Pesticide residues (THA/5/021)	Das, H.A.	TA-1844	S
	Goitre and anaemia prevention (THA/8/008)	Fiedelman, H.W.	TA-1789	D
Tunisia	Industrial control of materials using radiation (TUN/8/006)	Dobrowolski, M.K.	TA-1842 (French)	S
Turkey	Nuclear techniques in animal science (TUR/5/008)	Wegger, I.	TA-1828	S
	Nuclear power safety (TUR/9/004)	Eraslan, A.H.	TA-1744	D
	Nuclear power safety (TUR/9/004)	Tusa, J.M.	TA-1751	D
	Nuclear power safety (TUR/9/004)	Schaub, T.	TA-1769	D
	Nuclear power safety (TUR/9/004)	Roggenbauer, H.	TA-1778	D
	Nuclear power safety (TUR/9/004)	West, P.J.	TA-1780	S
	Nuclear power safety (TUR/9/004)	Derickson, W.K.	TA-1790	D
	Nuclear power safety (TUR/9/004)	Kuzay, T.M.	TA-1815	D
U.A. Emirates	Nuclear energy planning (UAE/0/002)	Tunkelo, E.H.	TA-1793	R
Uruguay	Scintigraphy (URU/6/008)	Erickson, J.J.	TA-1798	D
Venezuela	Plant breeding (VEN/5/005)	Murty, B.R.	TA-1774	D
	Application of radioisotopes in industry and analytical control of radiopharmaceuticals (VEN/8/006)	Servian, J.L.	TA-1822 (Spanish)	D
Yugoslavia	Research reactor modernization (YUG/4/014)	Baers, L.B.	TA-1783	D
	Reactor safety (YUG/4/015)	Holmstroem, H.L.	TA-1740	D

Recipient country	Subject (Project code)	Author	Reference no. ^a (IAEA/)	Distr. status ^b
Yugoslavia	Reactor safety (YUG/4/015)	Vanne, J.S.	TA-1750	D
	Nuclear power safety (YUG/9/010)	Brown, L.	TA-1741	D
	Nuclear power safety (YUG/9/010)	Gifford, F.A.	TA-1788	D
	Nuclear power safety (YUG/9/010)	Virgilio, M.J.	TA-1806	D
	Nuclear power safety (YUG/9/010)	Iansiti, E. Rosen, M.	TA-1812	D
	Nuclear power safety (YUG/9/010)	Collins, H.	TA-1827	D
Zaire	Training of personnel in electronic equipment maintenance (ZAI/4/007)	De Pooter, J.P.	TA-1753 (French)	R
	X-ray fluorescence analysis	Dziunikowski, B.	UNDP-ZAI/76/004-01 (French)	S
Zambia	Uranium extraction and analysis (ZAM/3/003)	Koppiker, K.S.	TA-1782	D
	Improving the efficiency of nitrogen and phosphate fertilizers through the use of nuclear techniques (ZAM/5/004)	Karim, M.	TA-1719	D
	Investigations on mass-rearing, sterility induction and ecology of tsetse flies (ZAM/5/006)	Wetzel, H.	TA-1747	R
	Mass rearing and ecological studies of <u>Glossina morsitans centralis</u> (ZAM/5/007)	Offori, E.D.	TA-1897	S

^a Report issued in English except where otherwise indicated.

^b D = De-restricted distribution; R = Restricted distribution; S = Restricted pending notification from Government.

ANNEX IV

VOLUNTARY CONTRIBUTIONS AND COST-FREE FELLOWSHIPS

A. Voluntary contributions
pledged and paid to the Technical Assistance Fund for 1981
as at 31 December 1981

Member State	1981 Base rate ^a %	Share of \$13 million target for voluntary contributions for 1981 using the base rate ^a	Pledged \$	Paid \$
(1)	(2)	(3)	(4)	(5)
Afghanistan	0.01	1 300	-	-
Albania	0.01	1 300	1 300	1 300
Algeria	0.12	15 600	-	-
Argentina	0.79	102 700	102 700	38 441
Australia	1.85	240 500	196 532	196 532
Austria	0.72	93 600	93 600	93 600
Bangladesh	0.04	5 200	-	-
Belgium	1.23	159 900	-	-
Bolivia	0.01	1 300	-	-
Brazil	1.28	166 400	166 400	166 400
Bulgaria	0.16	20 800	20 800	20 800
Burma	0.01	1 300	-	-
Byelorussian SSR	0.40	52 000	56 417	56 417
Canada	3.32	431 600	431 600	431 600
Chile	0.07	9 100	9 500	9 500
Colombia	0.11	14 300	-	-
Costa Rica	0.02	2 600	-	-
Cuba	0.11	14 300	19 157	19 157
Cyprus	0.01	1 300	1 300	1 300
Czechoslovakia	0.84	109 200	25 126	25 126
Dem. Kampuchea	0.01	1 300	-	-
Dem. P.R. Korea	0.05	6 500	6 500	6 500
Denmark	0.75	97 500	97 500	97 500
Dominican Republic	0.03	3 900	-	-
Ecuador	0.02	2 600	2 600	2 600
Egypt	0.07	9 100	9 100	-
El Salvador	0.01	1 300	-	-
Ethiopia	0.01	1 300	-	-
Finland	0.49	63 700	63 700	63 700
France	6.33	822 900	822 900	822 900

Member State	1981 Base rate ^a %	Share of \$13 million target for voluntary contributions for 1981 using the base rate ^a	Pledged \$	Paid \$
(1)	(2)	(3)	(4)	(5)
Gabon	0.02	2 600	-	-
German D.R.	1.41	183 300	154 762	154 762
Germany, F.R.	8.40	1 092 000	1 092 000	1 092 000
Ghana	0.03	3 900	2 100	2 100
Greece	0.35	45 500	45 500	45 500
Guatemala	0.02	2 600	1 700	1 700
Haiti	0.01	1 300	-	-
Holy See	0.01	1 300	-	-
Hungary	0.33	42 900	33 852	33 852
Iceland	0.03	3 900	-	-
India	0.61	79 300	79 300	79 300
Indonesia	0.16	20 800	20 800	20 800
Iran	0.66	85 800	-	-
Iraq	0.12	15 600	15 600	15 600
Ireland	0.16	20 800	20 800	20 800
Israel	0.25	32 500	18 200	18 200
Italy	3.49	453 700	329 218	-
Ivory Coast	0.03	3 900	-	-
Jamaica	0.02	2 600	-	-
Japan	9.69	1 259 700	1 259 700	1 259 700
Jordan	0.01	1 300	-	-
Kenya	0.01	1 300	-	-
Korea, R.	0.15	19 500	19 500	19 500
Kuwait	0.20	26 000	-	-
Lebanon	0.03	3 900	3 900	3 900
Liberia	0.01	1 300	-	-
Libyan A.J.	0.23	29 900	-	-
Liechtenstein	0.01	1 300	1 300	1 300
Luxembourg	0.05	6 500	-	-
Madagascar	0.01	1 300	1 300	-
Malaysia	0.09	11 700	11 700	11 700
Mali	0.01	1 300	-	-
Mauritius	0.01	1 300	-	-
Mexico	0.77	100 100	-	-
Monaco	0.01	-	-	-
Mongolia	0.01	1 300	1 300	-
Morocco	0.05	6 500	6 500	6 500
Netherlands	1.65	214 500	214 500	214 500
New Zealand	0.27	35 100	-	-
Nicaragua	0.01	1 300	-	-
Niger	0.01	1 300	1 300	-
Nigeria	0.16	20 800	-	-
Norway	0.51	66 300	66 300	66 300
Pakistan	0.07	9 100	9 100	9 100
Panama	0.02	2 600	-	-

Member State	1981 Base rate ^a %	Share of \$13 million target for voluntary contributions for 1981 ^a using the base rate	Pledged \$	Paid \$
(1)	(2)	(3)	(4)	(5)
Paraguay	0.01	1 300	-	-
Peru	0.06	7 800	-	-
Philippines	0.10	13 000	13 000	-
Poland	1.25	162 500	150 602	150 602
Portugal	0.19	24 700	24 700	24 700
Qatar	0.03	3 900	3 900	3 900
Romania	0.21	27 300	27 300	-
Saudi Arabia	0.59	76 700	76 700	76 700
Senegal	0.01	1 300	-	-
Sierra Leone	0.01	1 300	-	-
Singapore	0.08	10 400	1 800	1 800
South Africa	0.43	55 900	-	-
Spain	1.72	223 600	30 000	20 233
Sri Lanka	0.02	2 600	2 600	2 600
Sudan	0.01	1 300	1 300	-
Sweden	1.33	172 900	172 900	172 900
Switzerland	1.06	137 800	137 800	137 800
Syrian A.R.	0.03	3 900	-	-
Thailand	0.10	13 000	13 000	13 000
Tunisia	0.03	3 900	1 030	1 030
Turkey	0.30	39 000	39 000	39 000
Uganda	0.01	1 300	-	-
Ukrainian SSR	1.48	192 400	190 409	190 409
USSR	11.22	1 458 600	1 521 739	1 521 739
U.A. Emirates	0.10	13 000	13 000	13 000
UK	4.51	586 300	586 300	586 300
U.R. Cameroon	0.01	1 300	-	-
U.R. Tanzania	0.01	1 300	1 300	1 300
USA	25.00	3 250 000	3 119 679	b
Uruguay	0.04	5 200	5 200	5 200
Venezuela	0.51	66 300	44 100	44 100
Viet Nam	0.03	3 900	-	-
Yugoslavia	0.43	55 900	55 900	55 900
Zaire	0.02	2 600	-	-
Zambia	0.02	2 600	2 600	-
TOTAL	100.00	13 000 000	11 772 823	8 192 700

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

^b An amount identical to that shown in column (4) was paid early in 1982.

B. Cost-free fellowships offered and awarded: 1981

Donor	Offered		Awarded	
	Number	Man-months	Number	Man-months
I. MEMBER STATES				
Argentina	6	72	1	12
Austria	a	-	2	14
Belgium	10	60	6	60
Brazil	10	120	3	21
Bulgaria	2	12	-	-
Czechoslovakia	9 ^b	-	7 ^c	66
Denmark	5	60	2	15
France	-	60	10	59
Germany, F.R.	-	165	27	160
Hungary	4	-	6	54
India	10	-	6	35
Israel	-	45	1	2
Italy	25	200	12	111
Japan	5	45	5	39
Mexico	2	24	-	-
Netherlands	8	-	6	53
Pakistan	6	-	-	-
Philippines	3	-	-	-
Poland	10	-	4	44
Romania	10	-	3	22
Spain	5	60	6	48
Thailand	2	-	-	-
United Kingdom	a	-	8	73
United States of America	a	-	96	1001
Yugoslavia	-	22	-	-
II. REGIONAL ORGANIZATIONS				
JINR/Dubna	3	36	-	-

a A specific amount of money was made available rather than a given number of fellowships.

b Includes five long-term fellowships for up to 60 man-months each.

c Includes five long-term awards, initially for 12 man-months for each of the candidates.

A N N E X V

PROJECTS UNDER IMPLEMENTATION FOR UNDP
(in thousands of dollars)

Project number	Project title	Total amount approved	Approved budgets					
			Prior to 1981	1981 ^a	1982	1983	1984	1985
<u>Albania</u>								
ALB/81/004	Preparatory assistance for the installation and operation of a research and service reactor	25	-	25	-	-	-	-
<u>Argentina</u>								
ARG/71/537	National Centre for Non-destructive Testing and Quality Control	1024	1032	(8)	-	-	-	-
ARG/78/020	Nuclear engineering	1548	888	660	-	-	-	-
<u>Bangladesh</u>								
BGD/77/008	Exploration for uranium and thorium	66	56	10	-	-	-	-
<u>Brazil</u>								
BRA/76/003	Nuclear manpower qualification and training	2681	2272	374	35	-	-	-
BRA/78/006	Development of agriculture through the application of nuclear technology - Phase II	703	517	186	-	-	-	-
<u>Bulgaria</u>								
BUL/77/013	Development of a centre for the application of isotopes	491	308	183	-	-	-	-
<u>Chile</u>								
CHI/74/005	Uranium prospecting	1176	1175	1	-	-	-	-
CHI/76/008	Nuclear power plant	990	968	22	-	-	-	-
CHI/79/001	Uranium prospecting - Phase II	522	371	151	-	-	-	-
<u>Colombia</u>								
COL/76/031	Prospecting of radioactive minerals	1542	917	305	320	-	-	-
<u>Cuba</u>								
CUB/77/001	Introduction of nuclear techniques into the national economy	2034	1011	302	721	-	-	-
<u>Egypt</u>								
EGY/78/011	National Centre for Radiation Technology - Phase II	654	47	419	188	-	-	-
<u>Ethiopia</u>								
ETH/78/005	Application of nuclear techniques	406	187	219	-	-	-	-
<u>Ghana</u>								
GHA/74/004	Training in the use of nuclear techniques	86	62	24	-	-	-	-
<u>Greece</u>								
GRE/79/004	Exploration for uranium in Central and Eastern Macedonia and Thrace	205	107	98	-	-	-	-
<u>India</u>								
IND/75/035	Geochemical investigations for uranium, thorium and associated atomic minerals	284	268	16	-	-	-	-
<u>Indonesia</u>								
INS/78/075	Radiation processing for industries	20	13	7	-	-	-	-
<u>Madagascar</u>								
MAG/77/012	Uranium prospecting and evaluation	1496	566	524	406	-	-	-
<u>Malawi</u>								
MLW/81/037	Negotiations on uranium exploration	8	-	8	-	-	-	-
<u>MOROCCO</u>								
MOR/73/019	Training and research in applied nuclear physics at the Faculty of Sciences, Rabat	692	675	17	-	-	-	-

Project number	Project title	Total amount approved	Approved budgets					
			Prior to 1981	1981 ^a	1982	1983	1984	1985
<u>Nigeria</u>								
NIR/72/005	Use of nuclear techniques in animal production	597	358	124	104	11	-	-
<u>Peru</u>								
PER/76/002	Nuclear energy	2392	1467	752	173	-	-	-
<u>Philippines</u>								
PHI/75/003	Training and consultancy in nuclear power plant safety analysis, engineering and public information	166	126	40	-	-	-	-
PHI/80/007	Philippine nuclear power manpower development programme	1114	-	220	86	229	311	268
<u>Romania</u>								
ROM/76/023	Development of nuclear technology - Phase II	653	535	118	-	-	-	-
<u>Senegal</u>								
SEN/77/005	Assistance to the Institute for the Application of Nuclear Techniques	214	-	79	135	-	-	-
<u>Sri Lanka</u>								
SRL/77/014	Radioactive tracer techniques for the study of coastal sedimentology	197	170	27	-	-	-	-
<u>Yugoslavia</u>								
YUG/78/007	Industrial application of high-energy ionizing radiation	166	127	27	12	-	-	-
YUG/78/008	Establishment of a uranium analysis laboratory at Zirovski Vrh Mine, Slovenia	160	80	7	73	-	-	-
YUG/79/006	Ecological laboratory with a mobile unit	53	-	53	-	-	-	-
<u>Zaire</u>								
ZAI/76/004	Strengthening of infrastructure - Centre régional d'études nucléaires - Regional Centre for Nuclear Studies (CREN), Kinshasa	618	161	190	267	-	-	-
<u>Africa</u>								
RAF/80/030	Training course on nuclear analytical techniques and their application	39	40	(1)	-	-	-	-
<u>Asia and the Pacific</u>								
RAS/79/061	Support for regional co-operation in the industrial application of isotopes and radiation technology	1185	137	1048	-	-	-	-
RAS/79/095	Training course on the use of nuclear techniques in the mineral industry	58	59	(1)	-	-	-	-
<u>Interregional</u>								
INT/81/901	Control of Rift Valley fever	17	-	17	-	-	-	-
INT/81/T04 IFSTD	Applications of modern techniques in physics to development	120	-	120	-	-	-	-

^a The carry-over of unimplemented provisions into 1982 and future years has been requested.

A N N E X V I

REGULAR AND SPECIAL PROGRAMME PROJECTS COMPLETED OR
CANCELLED DURING 1981

A. Completed projects

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Algeria	Nuclear power studies ALG/0/007	1981	0.5	-
Argentina	Nuclear analytical methods ARG/2/005	1978	1	-
	Nuclear metallurgy ARG/4/048	1975	4	-
	Nuclear materials ARG/4/057	1977	6.5	-
	Fuel elements ARG/4/058	1977	4.5	-
	Nuclear metallurgy ARG/4/059	1977	9	-
	Fuel element fabrication ARG/4/061	1978	0.5	-
	High-temperature fatigue ARG/4/064	1978	3	-
	Mechanical properties of fuel cladding ARG/4/074	1979	0.5	-
Bangladesh	Chemical analysis BGD/2/005	1978	-	29 300
	Food preservation BGD/5/008	1980	-	23 500
Bolivia	Uranium prospection BOL/3/009	1980	-	38 700
Brazil	Secondary standards dosimetry laboratory BRA/1/019	1980	2.5	15 600
	Raw materials prospection BRA/3/005	1975 1976	72	-

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Brazil	Nuclear power plant safety analysis BRA/9/012	1978	3.5	-
Bulgaria	Hospital physics BUL/6/005	1981	1	21 500
Burma	Neutron physics/chemistry BUR/1/009	1979 1980	8.5	95 500
	Radiation sterilization BUR/7/003	1979	1	-
Chile	Activation analysis CHI/1/011	1981	3	-
	Chemical analysis laboratory CHI/2/007	1980	1	-
	Radioisotopes in hydrology CHI/8/009	1979	2	-
Costa Rica	Uranium prospection COS/3/002	1980	3.5	28 200
	Radioisotopes in animal science COS/5/004	1977, 1978 1979	33.5	44 100
Cuba	Activation analysis laboratory CUB/1/003	1981	-	37 200
	Moessbauer effect in metallurgy CUB/4/005	1975 1977	2	47 700
	Nuclear techniques in the utilization of fertilizers and water CUB/5/005	1980	-	41 600
Cyprus	Radioisotopes in hydrology CYP/8/002	1979	0.5	7 500

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Ecuador	Nuclear science education ECU/0/002	1977, 1979	20.5	19 800
	Nuclear techniques in animal science ECU/5/004	1980	1.5	-
Egypt	Fuel cladding EGY/4/016	1980	0.5	-
	Mediterranean fruit fly control EGY/5/011	1981	1	-
Ghana	Riverine tsetse fly study GHA/5/009	1981	0.5	-
Greece	Radiopharmaceuticals GRE/2/013	1979	0.5	50 700
	Use of neutron moisture meter GRE/5/012	1980	1	6 500
	Environmental radioactivity GRE/9/010	1981	-	29 100
Guatemala	Nuclear planning and programming GUA/0/004	1979	0.5	-
Hungary	Nuclear non-destructive nitrogen determination HUN/1/004	1978	-	65 000
Iceland	Radioactive logging ICE/8/003	1980	1	-
India	Radioisotopes in industry IND/8/009	1979	-	8 500

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Indonesia	Labelled compounds INS/2/008	1980	3	-
	Labelled compounds INS/2/009	1980	-	49 500
	Nuclear fuel fabrication INS/4/015	1979	1	-
	Radiation processing INS/8/010	1980	3	-
Iraq	Radioimmunoassay IRQ/2/006	1981	-	16 000
Israel	Secondary standards dosimetry laboratory ^a ISR/1/009	1980 1981	-	55 300
	Radiopharmaceutical quality control ^a ISR/2/011	1981	-	5 400
	Research reactor modification ^a ISR/4/008	1979	-	28 600
	Reactor safety studies ^a ISR/4/009	1979, 1980 1981	0.5	55 200
	Nuclear techniques in fisheries research ^a ISR/7/005	1979	1.5	-
	Nuclear power reactor siting ISR/9/003	1977	0.5	5 000
	Ivory Coast	Nuclear science laboratory IVC/0/002	1981	0.5
Kenya	Nuclear science laboratory KEN/0/004	1980	-	44 300
	Nuclear medicine KEN/6/002	1978 1980	15.5	31 100

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Korea, R.	Pesticide residues ROK/5/015	1976	0.5	-
Libyan A.J.	Nuclear research centre LIB/0/004	1981	0.5	-
	Health physics LIB/9/003	1981	0.5	-
Madagascar	Nuclear raw materials prospection MAG/3/003	1978	14	243 900
Malaysia	Food preservation MAL/5/007	1980	2	-
	Radioisotopes in medicine MAL/6/006	1977	7	-
	Nuclear medicine MAL/6/008	1980	-	22 200
Mauritius	Nuclear techniques in agriculture MAR/5/003	1980	2	37 600
Mexico	Nuclear manpower training MEX/0/004	1980	1	-
	Nuclear materials processing MEX/3/012	1975	1.5	-
	Uranium ore processing MEX/3/015	1976	1	-
	Radiosterilization of medical products MEX/7/004	1978	1	-
	Nuclear power safety MEX/9/021	1980	11.5	-
Mongolia	Radiation biophysics MON/7/002	1976	-	91 900

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Morocco	Nuclear medicine MOR/6/007	1978	7	11 000
		1979		
Niger	Radioisotopes in hydrology NER/8/002	1980	2	14 900
	Regulatory and medical aspects of radiation protection NER/9/004	1981	1	-
Nicaragua	Nuclear energy planning NIC/0/002	1978	0.5	-
Pakistan	Creep rate measurement PAK/4/020	1980	-	13 800
	Radioisotopes in agriculture PAK/5/013	1979	-	63 500
Paraguay	Nuclear medicine PAR/6/005	1981	0.5	-
	Radioisotope investigation in Pilcomayo River basin PAR/8/002	1980	0.5	7 900
Peru	Nuclear science training PER/0/005	1977	8	26 100
	Nuclear research centre PER/0/007	1978	3	47 400
	Calibration and dosimetry laboratory PER/1/002	1976 1979	-	58 900
	Radioisotope laboratory PER/4/006	1980	-	58 800
	Radioisotopes in agriculture PER/5/009	1978	7.5	20 200

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Peru	Labelled compounds PER/6/006	1980	3	28 100
	Environmental radioactivity PER/9/009	1980	-	36 500
Philippines	Nuclear manpower training PHI/0/004	1980	0.5	-
	Radioisotopes in animal science PHI/5/012	1978	2.5	5 000
	Radioisotopes in medicine PHI/6/007	1977	2.5	18 100
	Nuclear power plant safety PHI/9/006	1978	24	-
	Nuclear risk assessment PHI/9/008	1979	2	-
Poland	Activation analysis POL/2/006	1980	1	29 900
	Waste management POL/9/005	1977	1.5	-
Spain	Reactor engineering SPA/4/002	1977, 1979 1980, 1981	51	-
	Nuclear power safety SPA/9/004	1980	9	-
Sudan	Nuclear techniques in food and agriculture SUD/5/014	1981	2	-
	Use of radioisotopes in hydrology SUD/8/003	1981	0.5	-
Syrian A.R.	Radioisotopes in agriculture SYR/5/007	1980	-	21 800

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Thailand	Radioisotopes in agriculture THA/5/022	1979	-	38 300
	Nuclear medicine THA/6/012	1978	4	14 600
	Goitre and anaemia prevention THA/8/008	1979	1.5	-
	Nuclear power plant siting THA/9/006	1979	1	-
Turkey	Nuclear materials management TUR/0/004	1980	-	13 900
	Liquid nitrogen production facility TUR/1/012	1981	-	50 500
	Nuclear power safety TUR/9/004	1978, 1979	16	400
U.A. Emirates	Nuclear energy planning UAE/0/002	1977	2	-
U.R. Cameroon	Nuclear raw materials CMR/3/004	1980	6	19 200
Uruguay	Central radioisotope service URU/4/005	1975	5.5	50 600
	Radioisotopes in agriculture URU/5/010	1978	2	6 700
Venezuela	INIS implementation VEN/0/002	1979	1	-
	Secondary standards dosimetry laboratory VEN/1/003	1980	0.5	-

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Viet Nam	Trace elements analysis VIE/2/002	1980	-	26 800
Yugoslavia	Uranium recovery study YUG/3/005	1981	2	-
	Research reactor modernization YUG/4/013	1979 1980	2	62 400
	Reactor safety YUG/4/015	1979	2	44 400
	Nuclear medicine YUG/6/002	1980	-	4 100
	Radiation polymerization YUG/8/008	1978	6	65 700
	Radioecology YUG/9/009	1978	2	-
Zaire	Labelled compounds ZAI/2/008	1979	-	8 300
	Nuclear electronics ZAI/4/007	1978	4.5	26 300
Zambia	Radioisotopes in animal science ZAM/5/008	1981	1	500
	Radioisotopes in medicine ZAM/6/003	1975 1978	19	44 600

^a Implementation of remaining provisions suspended.

B. Cancelled projects

Recipient	Project title and code	Year of approval	Assistance provided	
			Experts (man-months)	Equipment (\$)
Argentina	Radiation physics ARG/1/020	1977	6	-
	Zirconium cladding materials ARG/4/060	1978	2	-
	Design of mechanical components ARG/4/072	1979	6	-
	Embrittlement through neutron irradiation ARG/4/075	1979	1	-
	Radiation damage in metals ARG/4/076	1979	4	-
Brazil	Irradiated UO ₂ nuclear fuel BRA/3/009	1980	3	-
India	Reactor physics IND/1/007	1979	1	-
Mexico	Nuclear power plant electrical system design MEX/4/030	1979	2	-
Pakistan	Radiation entomology PAK/5/014	1979	-	60 000
	Derived working limits laboratory PAK/9/003	1980	1	-
U.A. Emirates	Radiation medicine UAE/6/002	1981	2	-

A N N E X V I I

FOOTNOTE-^a/ PROJECTS MADE OPERATIONAL DURING 1981

Recipient	Project title and code	Experts		Equipment	
		Man-months	Source ^a	\$	Source ^a
Bangladesh	Nuclear medicine BGD/6/005	-	-	74 000	USA
Bolivia	Secondary standards dosimetry laboratory BOL/1/007	6	UK	25 000	UK
Brazil	Radiation defects in ferro-electric materials BRA/4/029	12	GFR	7 500	GFR
Colombia	Isotopes in hydrology COL/8/010	3	GFR	170 000	GFR
Egypt	Nitrogen fertilizer studies EGY/5/010	3	GFR	160 000	GFR
Ghana	Applications of nuclear techniques GHA/4/007	-	-	37 000	USA
Greece	Environmental radioactivity GRE/9/010	-	-	30 000	USA
Kenya	Nuclear science laboratory ^b KEN/0/004	-	-	60 000	USA
Korea, R.	Soil-water relationship studies ROK/5/019	6	USA	11 000	USA
	Nuclear power plant safety ROK/9/017	3	USA	30 000	USA
	Radiation safety of nuclear power plants ROK/9/018	6	USA	-	-

Recipient	Project title and code	Experts		Equipment	
		Man-months	Source ^a	\$	Source ^a
Malaysia	Soil moisture studies MAL/5/012	2	USA	6 500	USA
Mexico	National nuclear power training MEX/0/003	18	USA	-	-
	Fuel elements MEX/4/031	4	GFR	-	-
	Industrial irradiation MEX/8/011	3	ARG	-	-
Morocco	Radioisotopes in animal science MOR/5/014	3	USA	60 000	USA
Pakistan	KANUPP electronic systems development PAK/4/023	-	-	30 000	TAF
Peru	Nuclear sciences PER/0/010	6	FIN	80 000	FIN
	Health physics PER/6/008	4	ARG	-	-
Philippines	National nuclear manpower training PHI/0/003	8	USA	50 000	USA
	Radioisotopes in agriculture PHI/5/016	2	USA	35 000	USA
	Pesticide residues PHI/5/017	4	USA	50 000	USA
Poland	Monitoring of radioactivity in the Baltic Sea POL/9/006	1	TAF	25 000	TAF

Recipient	Project title and code	Experts		Equipment	
		Man-months	Source ^a	\$	Source ^a
Portugal	Borehole logging POR/3/004	-	-	25 000	USA
Singapore	Neutron monitoring SIN/9/011	-	-	31 000	UK
Thailand	Pesticide residue studies THA/5/025	-	-	12 000	GFR
	Nuclear medicine THA/6/015	4	USA	150 000	USA
Turkey	Nuclear science centre TUR/4/017	-	-	15 000	USA
	Film badge laboratory ^b TUR/9/006	-	-	30 000	TAF
Uruguay	Nuclear research centre ^b URU/0/005	-	-	30 000	USA
	Moessbauer spectroscopy URU/1/003	3	USA	65 000	USA
	Radioisotopes in animal science URU/5/013	3	USA	18 000	USA
Yugoslavia	Nuclear medicine ^b YUG/6/002	-	-	7 000	USA
	Radioecology ^b YUG/9/011	-	-	40 000	GFR

^a Explanation of abbreviations: ARG = Argentina, FIN = Finland, GFR = Federal Republic of Germany, TAF = Technical Assistance Fund, UK = United Kingdom, USA = United States of America.

^b Projects approved under prior years' programmes; all others were approved under the 1981 programme.

A N N E X V I I I

APPROVALS AGAINST THE RESERVE FUND IN 1981

Recipient	Project title and number	Experts m/m	Equipment \$	Total \$
A. <u>New projects</u>				
Algeria	Nuclear power studies ALG/0/007	1	-	4 800
	Radioisotopes in hydrology ALG/8/002	0.5	-	2 400
Bangladesh	Symposium on the role of physics in development BGD/1/006	1	-	4 800
Bolivia	Nuclear planning and programming BOL/0/003	2	-	9 600
Brazil	Ecological investigations in the Amazon Basin BRA/0/008	3	-	14 400
Burma	Radiotherapy BUR/6/011	-	10 000(NCC)	10 000
Colombia	Irradiated vaccines against parasites COL/5/005	1.5	-	7 200
Dominican Republic	Nuclear instrumentation and nuclear analytical techniques DOM/1/002	1	-	4 800
Egypt	Mediterranean fruit fly control EGY/5/011	1	-	4 800
	Site evaluation EGY/9/011	4	-	19 200
Ivory Coast	Nuclear science laboratory IVC/0/002	1	-	4 800
Libyan Arab Jamahiriya	Health physics LIB/9/003	1	-	4 800
Niger	Regulatory and medical aspects of radiation protection NER/9/004	2	-	9 600
Peru	Medfly control PER/5/011	1	-	4 800

Recipient	Project title and number	Experts m/m	Equipment \$	Total \$
Sudan	Nuclear techniques in food and agriculture SUD/5/014	2	-	9 600
	Use of radioisotopes in hydrology SUD/8/003	1	-	4 800
United Arab Emirates	Radiation medicine UAE/6/002	2	-	9 600
Sub-total		25.0	10 000	130 000
B. <u>Supplementary assistance to existing projects</u>				
Bulgaria	Microbiology BUL/7/002	-	8 500	8 500
Indonesia	Ion implantation techniques INS/1/011	1	-	4 800
Spain	Reactor engineering SPA/4/002	3	-	14 400
Viet Nam	Nuclear physics VIE/1/003	-	17 000	17 000
Zambia	Nuclear physics ZAM/0/004	4	-	19 200
Sub-total		8.0	25 500	63 900
TOTAL		33.0	35 500	193 900

A N N E X I X

CHANGES TO APPROVED PROJECTS

Recipient	Project title and code	Existing approval 1 January 1981		Project changes in 1981	
		Experts (man-months/days)	Equipment (\$)	Experts ^a (man-months/days)	Equipment (\$)
Afghanistan	Nuclear science AFG/1/004	40	55 000 150 000 NCC ^b	(6)	12 000 (12 000) NCC
Algeria	Secondary standards dosimetry laboratory ALG/1/005	3	35 000	-	(4 600) 4 600 NCC
	Food irradiation ALG/5/005	6	100 000	(1/15)	15 000
Argentina	Nuclear analytical methods ARG/2/005	2	-	(1)	
	Fuel elements ARG/4/058	9	-	(3/10)	-
	Fuel element fabrication ARG/4/061	2	-	(1/24)	-
	Non-destructive testing ARG/8/008	5	-	6	-
Bangladesh	Food preservation BGD/5/008	-	21 000	-	2 500
Bolivia	Secondary standards dosimetry laboratory BOL/1/007	6	25 000	-	4 000
	Radiopharmaceuticals BOL/6/010	-	22 000 55 000 NCC	-	6 100 5 500 NCC
	Radiation protection BOL/9/004	6	25 000	-	2 000
Brazil	Radioisotope production BRA/4/027	8	-	(1)	4 800
Burma	Radioisotopes in haematology BUR/6/007	12	27 300	1	-
Costa Rica	Applied nuclear physics COS/1/005	6	60 000	(6)	24 000
Cuba	Moessbauer spectrometry CUB/4/007	-	42 000 115 000 NCC	-	(17 000) 17 000 NCC
	Food irradiation CUB/5/004	-	1 000 900 000 NCC	-	- 27 000 NCC
	Radioimmunoassay CUB/6/006	2	5 000	(1)	4 800
	Industrial applications CUB/8/006	-	- 105 000 NCC	-	6 000 -
Czechoslovakia	Irradiation facility CZE/4/002	-	1 000 800 000 NCC	-	- (29 662) NCC

Recipient	Project title and code	Existing approval 1 January 1981		Project changes in 1981	
		Experts (man-months/days)	Equipment (\$)	Experts ^a (man-months/days)	Equipment (\$)
Dem. P.R. Korea	Radiopharmaceuticals DRK/2/002	1	114 000 177 000 NCC	-	29 500 (29 500) NCC
Ecuador	Uranium prospection ECU/3/005	6	26 000	6	(26 000)
	Nuclear techniques in animal science ECU/5/005	-	20 500	-	4 000
Egypt	Activation analysis EGY/1/012	2	30 000 45 000 NCC	(2)	9 600 -
	Reactor engineering EGY/4/014	5	28 500	(1/15)	7 200
	Zircaloy cladding materials EGY/4/015	4	- -	(1)	3 600 1 200 NCC
	Nuclear power safety training EGY/9/010	12	5 000	(1/15)	6 300
Ghana	Radioisotopes in medicine GHA/6/004	12	42 877	(2)	10 000
	Gamma irradiation facility GHA/8/004	3	176 000	(2/12)	(102 000)
Greece	Radiopharmaceuticals GRE/2/013	3	50 000	(2)	-
	Radiopharmaceuticals GRE/2/015	-	81 000 80 000 NCC	2	- 10 000 NCC
Guatemala	Applied nuclear science GUA/0/003	7	45 000	(3)	14 400
Hungary	Nuclear non-destructive nitrogen determination HUN/1/004	1	60 000	(1)	4 050
Iraq	Radioimmunoassay IRQ/2/006	-	25 000	-	(6 500)
	Reactor safety studies IRQ/4/006	12	42 000 -	-	(19 000) 19 000 NCC
Israel	Radiopharmaceutical quality control ISR/2/011	-	45 000	-	(39 554)
Ivory Coast	Radioisotopes in agriculture IVC/5/007	7	32 000	(1)	4 800
	Plant breeding IVC/5/010	4	30 000	-	5 000
Jordan	Nuclear science JOR/1/002	15	148 000 60 000 NCC	-	- (9 720) NCC
	Radioisotopes in hydrology JOR/8/002	2	99 300	(1)	4 000

Recipient	Project title and code	Existing approval 1 January 1981		Project changes in 1981	
		Experts (man-months/days)	Equipment (\$)	Experts ^a (man-months/days)	Equipment (\$)
Kenya	Nuclear science laboratory KEN/0/004	-	60 000	-	(17 000)
	Development of vaccine for bilharzia KEN/7/002	1	25 000	-	2 500
Korea, R.	Radioisotopes in agriculture ROK/5/018	12	97 000	-	51 070
	Nuclear power plant safety ROK/9/009	3	30 000	-	(4 500)
	Nuclear power plant safety ROK/9/017	3	30 000	-	4 000
Madagascar	Nuclear physics MAG/1/004	4	8 400	(1)	5 000
	Nuclear raw materials MAG/3/004	21	84 000	(2)	9 600
Malaysia	Nuclear power planning MAL/0/006	12	-	(4/15)	-
	Secondary standards dosimetry laboratory MAL/1/003	13	146 000 -	-	(4 600) 4 600 NCC
	Research reactor centre MAL/4/003	12	-	4/15	-
	Non-destructive testing MAL/4/004	3	- 15 000 NCC	-	15 000 (15 000) NCC
Mali	Radioisotopes in agriculture MLI/5/004	12	35 000	(6)	28 800
Mexico	Nuclear materials processing MEX/3/012	3	-	(1/20)	-
Mongolia	Radiation biophysics MON/7/002	-	10 000 90 000 NCC	-	4 000 (4 000) NCC
Morocco	Nuclear electronics MOR/4/005	12	-	(3)	-
	Radioisotopes in agriculture MOR/5/013	6	8 000 54 000 NCC	1	- -
	Nuclear medicine MOR/6/007	5	10 000	2	-
Panama	Nuclear medicine PAN/6/004	4	17 600	-	2 000
Peru	Nuclear science training PER/0/005	8	24 900 -	-	- 1 100 NCC
	Nuclear science training PER/0/009	3	40 000	1	-
	Nuclear sciences PER/0/010	6	80 000	(1/15)	16 056

Recipient	Project title and code	Existing approval 1 January 1981		Project changes in 1981	
		Experts (man-months/days)	Equipment (\$)	Experts ^a (man-months/days)	Equipment (\$)
Philippines	Radioimmunoassay kit production PHI/2/006	3	12 500 -	-	(5 500) 5 500 NCC
	Radioisotopes in medicine PHI/6/009	-	28 500	-	(2 000)
	Sterilization of medical products PHI/8/009	1	35 000	-	102 000
	Radioactive waste management PHI/9/009	-	20 000	-	2 000
Poland	Radiopharmaceuticals POL/2/007	-	42 000	-	8 000
	Monitoring of radioactivity in the Baltic Sea POL/9/006	1	25 000	-	3 500
Portugal	Radiochemistry POR/2/006	-	80 000 -	-	20 000 40 000 FIT ^c
	Uranium prospection POR/3/002	9/20	30 000	(3)	-
	Uranium prospection POR/3/003	7	35 000	-	(9 500)
	Borehole logging POR/3/004	-	25 000	-	2 500
	Nuclear power safety POR/9/002	13	17 500	(5)	-
	Environmental radioactivity POR/9/003	2	45 000	-	(15 000)
Romania	Nuclear physics ROM/1/003	10	255 000	(3)	14 400
	Nuclear techniques in materials analysis ROM/2/007	3	35 000	(3)	14 400
	Nuclear materials research ROM/4/009	2	150 000	-	(18 000)
	Nucleonic instruments for monitoring industrial processes ROM/8/007	1	30 000	(0/21)	9 000
Sierra Leone	Radioisotopes in medicine SIL/6/003	12	30 000 30 000 NCC	-	- 5 000 NCC
Sri Lanka	Non-destructive testing SRL/4/007	6	32 000 10 000 NCC	-	5 000 -
Sudan	Nuclear science laboratory SUD/0/006	11	167 000 45 000 NCC	-	(7 100) 7 100 NCC
	Isotopes in animal science SUD/5/013	6	10 000	(1)	4 800

Recipient	Project title and code	Existing approval 1 January 1981		Project changes in 1981	
		Experts (man-months/days)	Equipment (\$)	Experts ^a (man-months/days)	Equipment (\$)
Thailand	Nuclear raw materials prospection THA/3/003	-	63 300	-	1 000
	Nuclear medicine THA/6/015	4	150 000	-	11 500
Tunisia	Radioisotopes in industry TUN/8/007	18	88 500 80 000 NCC	-	104 000 (15 000) NCC
	Nuclear materials management TUR/0/004	-	25 000	-	(11 000)
Turkey	Liquid nitrogen production facility TUR/1/012	-	60 000 NCC	-	(7 000) NCC
	Nuclear science centre TUR/4/017	-	15 000	-	8 500
	Nuclear techniques in agriculture TUR/5/009	-	50 000	-	26 000
	Nuclear power safety TUR/9/004	48	-	(32)	500
	Film badge laboratory TUR/9/006	-	30 000	0/15	7 600
	Nuclear physics URT/1/003	10	55 600 40 000 NCC	-	3 000 (3 000) NCC
U.R. Tanzania	Radioisotopes in agriculture URT/5/002	6	43 800	3	5 500
	Radioisotopes in agriculture URT/5/004	6	36 000 33 000 NCC	-	(15 000) 15 000 NCC
	Nuclear research centre URU/0/006	2	- 75 000 NCC	-	11 000 (11 000) NCC
Uruguay	Isotopes in agriculture URU/5/012	6	4 000 30 000 NCC	(1)	4 800 -
	Moessbauer spectrometry VEN/4/007	3	35 000	-	3 000
Venezuela	Radioisotopes in agriculture VEN/5/006	12		(4)	
	Radioisotopes in agriculture VEN/5/007	-	43 000	-	19 200
	Nuclear physics teaching VIE/1/004	2	31 000 60 000 NCC	-	6 200 -
Viet Nam	Nuclear electronics laboratory VIE/4/002	6	50 000	-	(3 500)
	Radioisotopes in medicine VIE/6/009	3	13 000 25 500 NCC	(1)	- (2 300) NCC
	Nuclear medicine VIE/6/010	-	11 000 30 000 NCC	-	5 500 7 500 NCC
	Radiation monitoring VIE/9/003	2	37 000 20 000 NCC	-	5 250 (5 250) NCC

Recipient	Project title and code	Existing approval 1 January 1981		Project changes in 1981	
		Experts (man-months/days)	Equipment (\$)	Experts ^a (man-months/days)	Equipment (\$)
Yugoslavia	Replenishment of cobalt-60 source YUG/4/016	-	- 100 000 NCC	-	- 10 500 NCC
	Nuclear power safety YUG/9/010	30	-	(6)	28 800
	Radioecological model YUG/9/012	-	50 000	1	(18 000)
Zaire	Labelled compounds ZAI/2/008	3	7 000	(3)	-
	Radioimmunoassay ZAI/2/009	3	20 000	-	(2 200)
	Radiopharmaceuticals ZAI/6/003	2	30 000	-	2 200
Zambia	Nuclear analytical laboratory ZAM/0/005	12	60 000 60 000 NCC	(4)	19 200 -
	Nuclear raw materials ZAM/3/003	24	18 000	-	2 500
	Radioisotopes in animal science ZAM/5/008	1	-	-	500
Interregional	Nuclear data techniques and instrumentation INT/1/018	12	- 120 000 NCC	(2)	9 600 -
		648/20	4 296 077	(100/12)	445 072
		-	3 464 500 NCC	-	(2 832)
		-	-	-	40 000 FIT
TOTAL		648/20	7 760 577	(100/12)	482 240

a Numbers in parentheses denote reductions - for example: (0/15) = minus 15 man-days and (4) = minus four man-months.

b NCC denotes selected non-convertible currencies.

c FIT denotes funds in trust - that is, assistance provided from funds made available by Member States to finance assistance for themselves.

