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# THE TECHNICAL ASSISTANCE PROVIDED BY THE AGENCY IN 1962

CONTENTS

## List of abbreviations

| | |
|---|---|
| CERN | European Organization for Nuclear Research |
| ECOSOC | Economic and Social Council of the United Nations |
| EPTA | United Nations Expanded Programme of Technical Assistance |
| TAB | Technical Assistance Board of the United Nations |
| TAC | Technical Assistance Committee of the Economic and Social Council of the United Nations |

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NOTE

All sums of money are expressed in United States dollars.

## INTRODUCTION

1. In June 1963 the Board of Governors reviewed the technical assistance the Agency had furnished in the previous year, pursuant to paragraph 20 of the Guiding Principles and General Operating Rules to Govern the Provision of Technical Assistance by the Agency [1]. In accordance with the wish expressed by the Board at the end of its discussion, the data on which its review was based is reproduced in the present document for the information of the General Conference.

## MAIN DEVELOPMENTS IN 1962

### General

2. This report reviews all the elements of the Agency's technical assistance activities which are provided in the form of experts, visiting professors, equipment and supplies, fellowships, training courses and the Agency's two mobile radioisotope laboratories. The atomic energy activities of the developing countries are also supported under the Agency's programme of research contracts.

3. The year 1962, the fifth year of the Agency's technical assistance programme, was marked by a substantial increase in requests for assistance but only a moderate increase in resources available for this purpose. The impact of the assistance on the atomic energy work of the recipient countries, although increasing, was thus limited, and available resources were utilized in projects in which they were expected to have the greatest effect.

### Resources

4. The resources available to the Agency in 1962, including resources in kind, were approximately $2 687 000, as compared with approximately $2 635 000 in 1961, and represented a reversal of the situation from 1960 to 1961, where a reduction was noted in the resources in money and in kind made available to the Agency by Member States. The increase in monetary resources from $1 789 000 in 1961 to $1 990 000 in 1962 was offset by a decrease in the estimated value of resources in kind which dropped from $846 000 in 1961 to $698 000 in 1962.

5. The method used to arrive at an estimation of the value of resources in kind made available free of charge by Member States in 1962 is explained as follows:

(a) Experts. The equivalent cost of experts has been based on the average salary of an expert, the daily subsistence allowance as established by TAB at the time of his services, plus the cost of a first-class return air ticket;

(b) Equipment. The cost of the equipment has been estimated according to information received from donor Governments. As far as the equipment donated by the Government of the Czechoslovak Socialist Republic is concerned, the value of the equipment itself is estimated at $25 000 and the value of training facilities for two trainees from the receiving country is estimated at $5000; and

(c) Fellowships. The calculation of the value of Type II fellowships has been based on the monthly stipend (either promised by the host country or as established currently by TAB), multiplied by the duration of the award in months. In many cases the estimated travel costs paid by the host country have been added to this figure.

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[1] GC(IV)/RES/65, Annex.

6. Resources available to the Agency under EPTA have continued to increase steadily and reached $843 000 in 1962 compared with $809 000 in 1961. The increase in the Agency's total resources is, however, not commensurate with the increase in resources available for technical assistance from other United Nations sources. For instance, the total resources made available to EPTA and the United Nations Special Fund increased from $72.6 millions in 1960 to $89.7 millions in 1961 and $104.2 millions in 1962, or by 23.5% and 16.2% respectively, while during this period the Agency's total resources remained almost unchanged.

7. The financing of the programme continued to be the main problem of the Agency's technical assistance activities in 1962. Every year there has been a considerable shortfall in meeting the target for voluntary contributions to provide funds for the technical assistance to be financed from the Agency's own resources. Consequently, the General Conference, at its fifth and sixth regular sessions, adopted resolutions inviting economically developed Member States to make voluntary contributions to the General Fund in amounts that are at least the same percentage of the target each year as are their assessed contributions to the Regular Budget; the other Member States were invited to make at least a token contribution to the General Fund. [2]

8. In 1962 the Board and the General Conference considered proposals for amendment of the Statute to enable all the Agency's activities to be financed from a single assessed budget. The General Conference requested the Board to study the question of financing the Agency's activities and report the results of such study to the General Conference at its seventh regular session. [3]

9. Another proposal was made by the Governments of eight Member States [4] to create various scientific installations for certain specific purposes in the developing countries. These Member States indicated that their Governments would be ready to contribute one third of the resources required for the implementation of such a programme. [5] The General Conference requested the Board and the Director General to study this proposal in order to determine how this and other offers of a like nature may best be introduced into the long-term programme. [6]

Assistance provided

10. The international character of the Agency's technical assistance programme is illustrated in the wide geographical spread of the nationalities of the experts and visiting professors and of the host countries for fellowships [7]. In 1962 technical assistance was provided to 54 countries, an increase of three on 1961, and more than in any previous year. A total of 428 fellowships were awarded to nationals fo 50 countries for placement in 30 countries. In addition there were 99 participants in the seven regional and international training courses arranged by the Agency. In all there were 180 assignments of experts and visiting professors of 24 different nationalities assigned to 35 countries. Equipment was provided to 26 countries and the services of the Agency's mobile radioisotope laboratories were provided to three countries. Assistance provided from the Agency's own resources, monetary and in kind, and under EPTA totalled $2 848 000 in 1962 as compared with $2 265 000 in 1961.

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[2] GC(V)/RES/100 and GC(VI)/RES/126.

[3] GC(VI)/RES/123.

[4] Bulgaria, Byelorussian Soviet Socialist Republic, the Czechoslovak Socialist Republic, Hungary, Poland, Romania, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics.

[5] GC(VI)/COM.1/67/Rev.1.

[6] GC(VI)/RES/131. The long-term programme is before the General Conference in document GC(VII)/227, Annex.

[7] See Annexes II and IV.

Procedures

11. The Agency's present procedures for providing assistance [1] were applied for the second full year in 1962. However, a number of projects approved by the Board had remained unimplemented for a prolonged period due partly to changes or delays in the recipient countries' atomic energy programmes and in some cases to difficulties in recruiting the experts required. Consequently, upon the recommendation of its Technical Assistance Committee, the Board authorized the Director General to release, after consultation with the Governments concerned, funds earmarked but not obligated for technical assistance projects that have been approved for at least two years, and to make such funds available for other approved technical assistance projects. Action taken by the Director General to utilize these savings will be reported to the Board.

12. EPTA procedures for programming and administration have been characterized by changes in order to adapt them to changing needs. In 1962, the preparation of the two-year programme for 1963-64 proceeded under the system of project programming adopted by ECOSOC [8], under which each project is prepared in detail for its entire duration. It will also be noted that projects of more than two years' but not exceeding four years' duration may be submitted for approval by TAC. TAC has expressed the hope that project programming will assist in making EPTA respond even more effectively to the needs of the developing countries for technical assistance.

Special Fund projects

13. A new development in the Agency's technical assistance activites has been the introduction of projects approved by the United Nations Special Fund. The first such project was approved by the Governing Council of the Special Fund in May 1962. The project is an extension of research and training facilities at the Institute for Applications of Nuclear Research in Agriculture, Forestry and Veterinary Sciences in Yugoslavia situated at Zemum, near Belgrade. The Special Fund has allocated $546 400 to the project and the Government's counterpart contribution is estimated at the equivalent of $1 245 667. The Agency has been appointed as the Executing Agency and, at the request of the Managing Director of the Special Fund, has assisted in evaluating the technical soundness of the project and prepared the plan of operation in collaboration with the Yugoslav authorities.

14. At the request of the Government of the Philippines, the Agency has also assisted in preparing a request to the Special Fund for assistance in a Pre-Investment Study on Power, including Nuclear Power, in Luzon, for meeting the projected electrical power requirements of the Luzon Grid during 1965-75. This request is to some extent based on an Agency study entitled Prospects of Nuclear Power in the Philippines [9], and was submitted in December 1962. In June 1963 a contribution of $477 500 from the Special Fund was approved by the Governing Council for the pre-investment study and a counterpart contribution from the Government of the Philippines was set at $262 000, which includes the Government's contribution towards local operating costs [10].

Other developments

15. Another development is the establishment of the Agency's first regional radioisotope training centre, namely the Middle Eastern Regional Radioisotope Centre for the Arab Countries in Cairo. The project agreement was approved by the Board in September 1962 and the centre was inaugurated in March 1963.

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[8] ECOSOC Resolution 854 (XXXII).

[9] STI/DOC/10/3.

[10] For further details on this project see document GC(VII)/240, paras. 2 - 8.

## RESOURCES AVAILABLE

### Types of resources

16. As in previous years the Agency's technical assistance programme relies on three types of resources:

(a) Voluntary contributions of money to the General Fund;

(b) Funds made available to the Agency as a result of its participation in EPTA; and

(c) Gifts by Member States of services, such as the provision of the services of experts or visiting professors completely or partly free of cost, the provision of fellowships at national institutions free or partly free of cost (Type II fellowships), and gifts of equipment.

### Monetary resources

17. The total monetary resources of the Agency showed a moderate increase from $1 789 495 in 1961 to $1 989 553 in 1962. As shown in Table 1 the major part of this increase is due to $1 146 294 available from the Agency's own resources in 1962 as compared with $980 881 in 1961, and represents a change in the slightly downward movement from 1960 to 1961. Under the EPTA biennial programme 1961-62 a total of $1 651 873 was allocated to the Agency which has been authorized to spend $808 614 in 1961 and $843 259 in 1962.

Table 1

Monetary resources 1959-1962

| Source | 1959 | | 1960 | | 1961 | | 1962 | |
|---|---|---|---|---|---|---|---|---|
| | $ | % | $ | % | $ | % | $ | % |
| Funds available from the Agency's own resources (General Fund and Operating Fund II)[a/] | 875 133 | 74.2 | 1 007 842 | 61.2 | 980 881 | 54.8 | 1 146 294 | 57.6 |
| Financial authorizations from EPTA | 304 580 | 25.8 | 639 362 | 38.8 | 808 614 | 45.2 | 843 259 | 42.4 |
| TOTAL | 1 179 713 | 100.0 | 1 647 204 | 100.0 | 1 789 495 | 100.0 | 1 989 553 | 100.0 |

a/ In comparison with last year's report (GC(VI)/INF/52) there have been certain changes made in the figures for 1959, 1960 and 1961. The figures as shown now reflect actual transfers from the General Fund to Operating Fund II plus income directly accrued to Operating Fund II as approved by the Board for technical assistance activities. They correspond to the figures shown in the other reports dealing with the technical assistance activities. In previous years the amounts were based on the total of expenditures and obligations incurred, plus unobligated earmarkings for the programme of experts and equipment.

18. Technical assistance financed from the Agency's own resources, the relationship in 1959, 1960, 1961 and 1962 between the targets for voluntary contributions to the General Fund, the amounts budgeted for technical assistance, the total amounts pledged, and amounts actually made available for technical assistance are shown in Table 2.

Table 2

Agency funds for technical assistance

| Item | 1959 $ | 1960 $ | 1961 $ | 1962 $ |
|---|---|---|---|---|
| Target for voluntary contributions to the General Fund | 1 500 000 | 1 500 000 | 1 800 000 | 2 000 000 |
| Amount pledged | 1 183 044 | 996 103 | 1 261 570 | 1 380 470 |
| Budgeted for technical assistance | 1 100 000 | 1 367 000 | 1 361 000 | 1 625 000 |
| Actually made available for technical assistance from the General Fund and Operating Fund II[a/] | 875 133 | 1 007 842 | 980 881 | 1 146 294 |

a/ See footnote to Table 1.

19. The amounts pledged by Governments for each of the four years were considerably lower than the target figures, varying from a minimum of 66% in 1960 to a maximum of 79% in 1959 and 1962. Pledges were lower even than the budget provisions for technical assistance except in 1959. Funds actually made available for technical assistance in each of the years 1959-61 represented about 75% of the budgeted figure, but dropped in 1962 to less than 70%.

20. Since $996 103 pledged for 1960 was far below the target for voluntary contributions of $1 500 000 and was $50 000 short of the amount required for the provision of approved technical assistance projects in that year, part of the balance in the General Fund and savings from previous years had to be used.

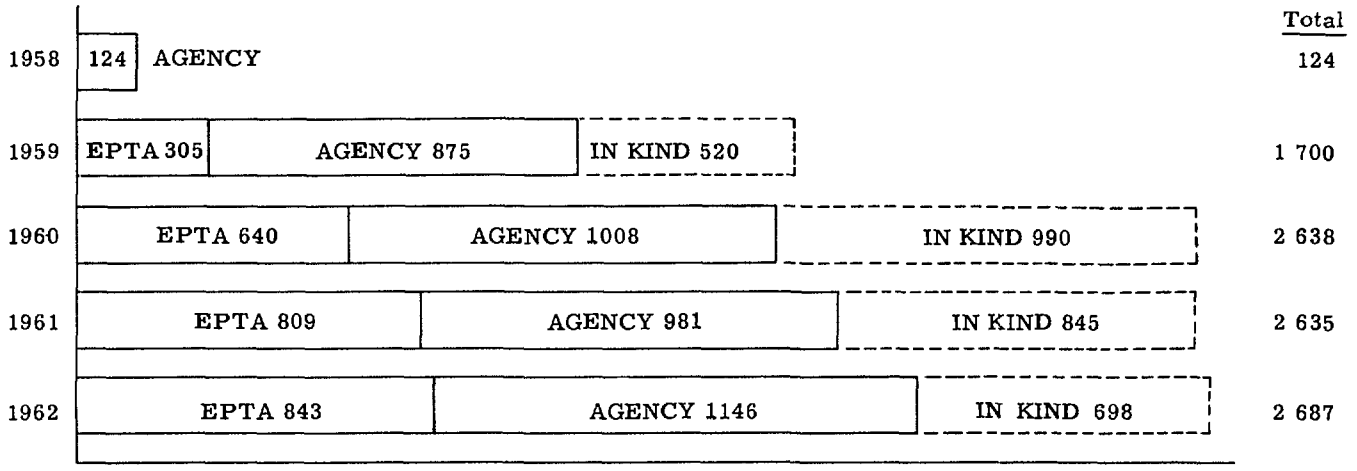
Resources in kind

21. The estimated total value of resources made available to the Agency as gifts in kind dropped from $845 000 in 1961 to $698 000 in 1962. The decline was mainly due to a decrease of Type II fellowships, the estimated value of which fell from $749 000 in 1961 to $481 000 in 1962. However, the estimated value of equipment provided in kind increased from $80 000 in 1961 to $197 500 in 1962 comprising contributions of a value of $167 500 from the United States of America and $30 000 from the Czechoslovak Socialist Republic. There was a slight increase in the estimated value of the services of cost-free experts made available to the Agency by France, the United Kingdom of Great Britain and Northern Ireland and the United States. Annex I shows the technical assistance provided by the Agency in 1962 as well as the use and distribution of the above-mentioned resources in kind.

Graph 1

Resources available for technical assistance activities of the Agency

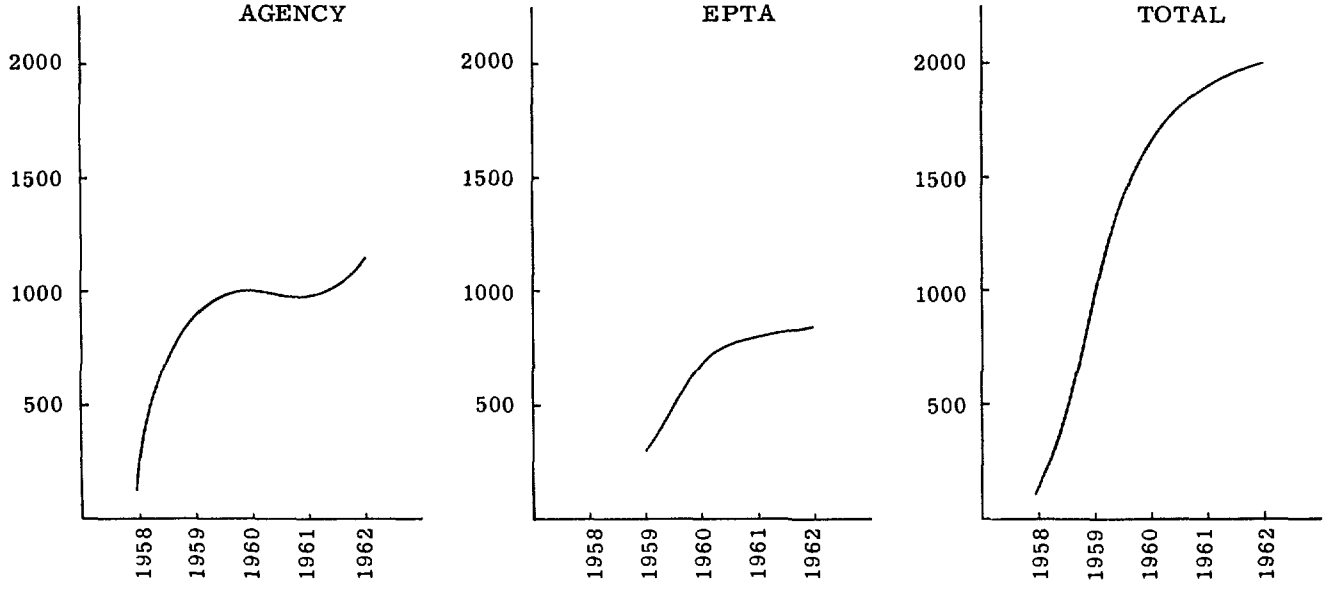
(in thousands of dollars)




Graph 2

Increase of available funds

(in thousands of dollars)



## THE PROGRAMME

### Use of available funds

(a) General

22. The cost of the various types of technical assistance provided on the basis of funds made available in the years 1959-62 from the Agency's own resources and under EPTA is shown in Table 3. The totals of funds available are also shown and represent funds for all forms of assistance in each of the four years under both programmes. None of the amounts includes assistance, fellowships, equipment and services of experts provided from the resources made available to the Agency as gifts in kind.

23. A comparison of Agency and EPTA monetary resources available in the years 1959-62 with total costs of technical assistance rendered during those years shows that the funds available - both Agency and EPTA - were not completely used. Under the new two-year programming procedure a substantial part of EPTA funds for 1961 was carried over into 1962 which considerably increased the flexibility of the programme. In 1962, as in previous years, the non-utilization of funds under EPTA arose partly from the fact that certain inconvertible currencies could not be utilized and had to revert as unobligated funds to the United Nations Special Account at the end of the programme year.

24. It will be seen from Table 3 that the cost of experts and visiting professors as a percentage of the total costs of technical assistance provided in the years 1959 to 1962 from the Agency's own resources has risen from 8.4% in 1959 to 33.6% in 1961 and from 10.4% to 59.9% under EPTA resources. From 1961 to 1962, the percentage continued to increase to 46.7% in the case of assistance provided from the Agency's own resources, but dropped to 41.3% under EPTA.

25. The percentage cost of equipment provided from the Agency's own resources has also increased from 1.4% of the total in 1959 to 14.0% in 1961 and, in the same years, from 5.6% to 7.3% under EPTA. However, from 1961 to 1962 the percentage dropped to 7.8% in the case of assistance provided from the Agency's own resources, but increased to 18.0% under EPTA. [11]

26. For the period 1959-61 the percentage costs of fellowships (including research fellowships) financed from the Agency's own resources show a declining trend from 83.8% to 42.9% and from 84.0% to 20.9% under EPTA. From 1961 to 1962, the decline continued slightly to 37.0% for assistance from the Agency's own resources, but there was a considerable increase to 37.0% under EPTA.

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[11] These percentages take no account of gifts of equipment amounting to $80 000 in 1961 and $197 500 in 1962.

Table 3

Distribution of costs by types of technical assistance provided in the years 1959-1962 as at 31 December 1962[a]/

(in thousands of dollars)

| Type of assistance | Agency | | | | | | | | EPTA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1959 | | 1960 | | 1961 | | 1962 | | 1959 | | 1960 | | 1961 | | 1962 | |
| | Cost | % | Cost | % | Cost | % | Cost | % | Cost | % | Cost | % | Cost | % | Cost | % |
| Experts | 13.1 | 2.9 | 222.2 | 22.3 | 212.9 | 22.8 | 377.6 | 37.7 | 26.2 | 9.8 | 193.6 | 38.1 | 254.9 | 59.4 | 392.5 | 34.2 |
| Equipment | 6.1 | 1.4 | 88.1 | 8.8 | 131.1 | 14.0 | 78.6 | 7.8 | 15.0 | 5.6 | 78.4 | 15.4 | 31.3 | 7.3 | 206.1 | 18.0 |
| Fellowships | 360.5 | 81.0 | 536.0 | 53.8 | 362.7 | 38.9 | 366.0 | 36.5 | 224.0 | 84.0 | 234.2 | 46.1 | 89.6 | 20.9 | 423.9 | 37.0 |
| Research fellowships | 12.6 | 2.8 | 14.7 | 1.5 | 37.7 | 4.0 | 5.4 | 0.5 | | | | | | | | |
| Visiting professors | 24.1 | 5.5 | 98.9 | 9.9 | 101.4 | 10.8 | 90.6 | 9.0 | 1.5 | 0.6 | 2.0 | 0.4 | 2.3 | 0.5 | 80.8 | 7.1 |
| Training courses | 15.9 | 3.6 | 8.0 | 0.8 | 68.5 | 7.3 | 66.4 | 6.6 | | | | | 49.0 | 11.4 | 42.7 | 3.7 |
| Mobile radioisotope laboratories | 12.6 | 2.8 | 28.6 | 2.9 | 20.5 | 2.2 | 19.2 | 1.9 | | | | | 2.2 | 0.5 | | |
| TOTAL | 444.9 | 100.0 | 996.5 | 100.0 | 934.8 | 100.0 | 1 003.8 | 100.0 | 266.7 | 100.0 | 508.2 | 100.0 | 429.3 | 100.0 | 1 146.0 | 100.0 |
| Available funds (see Table 1) | 875.1 | | 1 007.8 | | 980.9 | | 1 146.3 | | 304.6 | | 639.4 | | 808.6 | | 843.3 | |

a/ The above figures represent expenditures and unliquidated obligations in connection with technical assistance provided during each reporting year, regardless of the year in which the funds originally became available. The figures for previous years have been brought up to date by adjustments resulting from the liquidation during 1962 of the unliquidated obligations of previous years. They therefore differ slightly from the figures shown in the same table for the same year in the report presented last year.

27. The information given in Table 3 as outlined in the preceding paragraphs might be compared with the corresponding amounts for experts, fellowships and equipment for EPTA as a whole (i.e. the programmes for all participating organizations). The percentage shares for each of these three types of assistance in the total costs of EPTA during the years 1958 to 1961 are as follows: [12]

| | 1958 | 1959 | 1960 | 1961 |
|---|---|---|---|---|
| Experts | 76.9 | 77.7 | 77.9 | 74.8 |
| Fellowships | 12.4 | 15.6 | 17.2 | 13.2 |
| Equipment | 10.7 | 6.7 | 4.9 | 12.0 |
| | 100.0 | 100.0 | 100.0 | 100.0 |

28. Information is provided in Annex I on the technical assistance given by the Agency in 1962 to each recipient country from the Agency's own monetary resources and under EPTA and from resources in kind. The total cost of technical assistance in 1962 provided from the monetary resources available to the Agency amounted to $2 150 000 and the value of assistance provided in the same year from resources in kind is assessed at $698 000. The total value of technical assistance provided by the Agency in 1962 to the recipient countries listed in Annex I is therefore about $2 848 000.

(b) Experts and visiting professors

29. From Annexes I and III it will be seen that in 1962 there were 180 assignments of experts and visiting professors who served for a total of 750 man-months in 35 countries and in seven regional training courses. In comparison with the 109 assignments in 1961 the increase was by 65%. Since some of the experts and visiting professors have served in more than one country, the total number of persons involved was only 171. These experts and visiting professors were nationals of 24 countries (see Annex II). The cost of 88 of these experts and visiting professors was met from the Agency's own resources, 69 were provided under EPTA and 14 were cost-free experts [13]. The number of experts in the field increased by 57% in 1962. As shown in Annex III, 40 experts and two visiting professors were concerned with applications of radioisotopes; 28 experts and 18 visiting professors with nuclear research, scientific studies and laboratory services; 26 experts with prospecting, mining and processing of nuclear raw materials; 19 experts and one visiting professor with health, safety and waste disposal; 20 experts and two visiting professors with nuclear reactors; five experts with fabrication and reprocessing of nuclear fuels; eight experts and five visiting professors with nuclear research laboratories and centres; and six experts with atomic energy in general.

(c) Equipment

30. Equipment was provided in 1962 to 24 countries for national or regional projects at a total cost of $284 700 from Agency funds and under EPTA. In addition, equipment in kind of an estimated value of $197 500 (see Annex I) was delivered to four countries so that the estimated total value of equipment supplied during 1962 is approximately $480 000.

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[12] Annual Report of TAB for 1960 and 1961, United Nations documents E/3471 and E/3605/Rev. 1.

[13] Not including members of preliminary assistance missions.

(d) Fellowships

31. In 1962, 356 Type I fellowships were awarded from the Agency's own resources and EPTA funds, including 96 participants in regional and international training courses. There were also 168 Type II fellowships. The total cost of EPTA and Agency fellowships in that year was $790 000. In addition, the total cost of research fellowships was $5400. The value of Type II fellowships is estimated at $480 000, so that the total value of all fellowships (Types I and II) provided by the Agency in 1962 is therefore estimated at $1 275 000.

32. The total number of fellowships awarded in 1962 increased to 524 or 62 more than in 1961. As shown in Table 4, 179 fellowships were awarded in applications of radioisotopes, 66 in health, safety and waste disposal, 126 in nuclear physics, 95 in reactor engineering and 58 in other subjects. Annexes IV and V show the total numbers of fellowships awarded in 1962, classified by place of study and nationality.

Table 4

Fellowships awarded in 1962 (by subject of study)

| Subject of study | Number of fellowships | | |
|---|---|---|---|
| | EPTA | Agency (Types I and II) | Total |
| General atomic energy development | - | 3 | 3 |
| Prospecting, mining and processing of nuclear raw materials | 4 | 7 | 11 |
| Nuclear chemistry | 11 | 33 | 44 |
| Nuclear physics | 19 | 107 | 126 |
| Nuclear reactor engineering | 29 | 66 | 95 |
| Application of radioisotopes: | | | |
| To biology | 6 | 39 | 45 |
| To medicine | 23 | 36 | 59 |
| To agriculture | 26 | 49 | 75 |
| Health, safety and waste disposal | 16 | 50 | 66 |
| TOTAL | 134[a] | 390[b] | 524 |

a/ Includes 24 participants in the regional training courses.

b/ Includes 72 participants in the international training courses.

(e) Training courses

33. Seven regional or international training courses were held in 1962, the total Agency cost of which amounted to about $111 000 (see Annex I).

Utilization of Agency funds

34. When a fellowship is approved, the funds necessary for its implementation are obligated. Similarly when the Board approves the provision of equipment or the services of an expert, funds are earmarked for this purpose. When a suitable expert has been

recruited, accepted by the Government and the Agency has entered into contract with him, or when the equipment has been ordered, these earmarked funds are obligated. When the expert takes on his assignment or when the equipment is delivered, then the funds are actually spent.

35. The funds made available to the Agency for technical assistance are therefore not always spent in the budget year in which they are made available. For instance, if the Board has approved the assignment of an expert in 1959 and the expert is only able to take up his assignment or the country is only able to receive him during 1960, the funds approved for this purpose out of the 1959 budget will be spent in 1960 and 1961. Similarly if a two-year fellowship is awarded in 1959 and the student can only be placed and commence his studies in 1960, the money made available for this purpose from the 1959 budget is actually spent in the years 1960, 1961 and 1962.

36. Table 5 below shows the Agency funds made available for technical assistance in the various budget years, together with the years in which the actual cash disbursements have been made. For instance it will be seen that of the money made available in 1960 a total of $911 000 has been spent of which $248 000, $468 000 and $195 000 were spent in the years 1960, 1961 and 1962 respectively. It will also be seen that, of the $652 000 spent in 1960, $38 000, $366 000 and $248 000 were from funds made available from the budget years 1958, 1959 and 1960 respectively. The table also indicates the continuous increase in the amounts spent by the Agency for technical assistance, reaching $957 000 in 1962.

Table 5

Yearly cash disbursements in connection with technical assistance activities of the Agency under its regular programme as at 31 December 1962[a]

(in thousands of dollars)

| Year of allocation \ Year of disbursement | 1958 | 1959 | 1960 | 1961 | 1962 | TOTAL |
|---|---|---|---|---|---|---|
| 1958 | 6 | 76 | 38 | 4 | - | 124 |
| 1959 | - | 100 | 366 | 152 | 30 | 648 |
| 1960 | - | - | 248 | 468 | 195 | 911 |
| 1961 | - | - | - | 252 | 433 | 685 |
| 1962 | - | - | - | - | 299 | 299 |
| TOTAL | 6 | 176 | 652 | 876 | 957 | 2 667 |

a/ Including allocations from the General Fund and Operating Fund II.

37. The status of the utilization of funds made available for technical assistance during the years 1958-62 is shown in Table 6. It will be seen that out of $4 135 000 made available for the years 1958-62, an amount of $2 667 000 was spent by the end of 1962. The balance consists of $844 000 which comprises unliquidated obligations of experts, visiting professors, equipment and fellowships, etc., $413 000 which are funds earmarked for projects already approved by the Board and savings of $211 000 as defined in the footnote to Table 6. It has not yet been possible to implement the approved projects referred to either because of non-availability of a suitable expert or because of inability of the recipient country to implement the project. It is with regard to these earmarked funds that the Director General is authorized to take action as described in paragraph 11 above.

Table 6

Status of allocations for technical assistance activities of the Agency from the General Fund and Operating Fund II as at 31 December 1962

(in thousands of dollars)

| Year of allocation | Monetary resources made available | Cash disbursements | Unliquidated obligations | Unobligated earmarkings[a/] | Savings (Deficit) |
|---|---|---|---|---|---|
| 1958 | 125 | 124 | - | - | 1 |
| 1959 | 875 | 648 | 6 | 38 | 183 |
| 1960 | 1 008 | 911 | 69 | 41 | (13) |
| 1961 | 981 | 685 | 208 | 76 | 12 |
| 1962 | 1 146 | 299 | 561 | 258 | 28 |
| TOTAL | 4 135 | 2 667 | 844 | 413 | 211[b/] |

a/ Experts and equipment only.

b/ This total covers all technical assistance activities of the Agency and can be divided into: savings on experts and equipment amounting to $170 000 and savings on fellowships amounting to $41 000.

38. Table 7 below aims at a reconciliation of the two different presentations in Tables 3 and 6 of the costs of technical assistance provided. Such costs include cash disbursements and unliquidated obligations, i.e. funds firmly committed for the provision of expert services, award of fellowships, or purchase of equipment.

Table 7

Reconciliation of costs of technical assistance as at 31 December 1962

(in thousands of dollars)

| Costs as per Table 3 \ Costs as per Table 6 | TOTAL | Year of allocation[a] 1958 | 1959 | 1960 | 1961 | 1962 |
|---|---|---|---|---|---|---|
| Expenditure[b] and unliquidated obligations in the year: | | | | | | |
| 1958 | 124[c] | 124 | - | - | - | - |
| 1959 | 445[c] | - | 445 | - | - | - |
| 1960 | 996[c] | - | 178 | 818 | - | - |
| 1961 | 934[c] | - | 11 | 133 | 791 | - |
| 1962 | 1 004[c] | - | 19 | 27 | 101 | 857 |
| Total | 3 504 | 124 | 653 | 978 | 892 | 857 |
| Add | | | | | | |
| Bank charges, insurance, etc. | 7 | - | 1 | 2 | 1 | 3 |
| Total cost for five years | 3 511[c/d] | 124[d] | 654[d] | 980[d] | 893[d] | 860[d] |
| Add | | | | | | |
| Unobligated earmarkings and savings[e] | 624 | 1 | 221 | 28 | 88 | 286 |
| MONETARY RESOURCES MADE AVAILABLE[f] | 4 135 | 125 | 875 | 1 008 | 981 | 1 146 |

a/ Year in which the funds originally became available.

b/ Cash disbursement.

c/ See Table 3.

d/ See Table 6 (total of "Cash disbursement" and "Unliquidated obligations").

e/ See Table 6.

f/ See Tables 1, 2, 3 and 6.

## IMPACT OF THE PROGRAMME

### General

39. Experience gained from the implementation of the Agency's technical assistance programme has been described in detail in previous annual reports [14], as well as in documents dealing with the Agency's long-term programme [15]. However, since the programme has now been in operation for a few years some information on the impact of

[14] GC(V)/INF/37 and GC(VI)/INF/52.

[15] GC(VII)/227 and GC(VII)/INF/59.

the Agency's technical assistance programme in the development of the atomic energy activities of Member States is becoming available and is described below.

40. In evaluating the Agency's technical assistance programme it is necessary to emphasize two aspects. Firstly, the programme has been in operation for only four years, and it would be unreasonable to expect any spectacular results in such a short time. Secondly, in most cases the assistance is provided as a part of a continuing programme of atomic energy development in the recipient country the results of which will not be apparent for several years to come, and even then its effect could not be measured in isolation from the programme as a whole. Such projects as research reactor programming and utilization, the work of visiting professors and the training of personnel come into this category. In other cases the results are more readily apparent and assessable and some of these cases will be referred to in the appropriate section of the report.

41. The impact of the Agency's technical assistance to Member States cannot be measured statistically. However, experts and visiting professors furnish the Agency with periodic progress reports on their assignments and prepare a final report for submission to the Government of the country in which they have served. Reports on the experts' work are also sought from the respective Governments of the countries in which experts have worked and information is available in the reports of the Resident Representatives of TAB in the countries concerned.

42. With regard to fellowships the Agency receives periodic reports on the progress of each fellow from the university or institution to which he has been assigned. Additionally, each fellow is required to make regular reports to the Agency and to submit a final report when he has completed his training and returned to his home country. In the latter report information is requested regarding the position he is then holding, his duties and his assessment of the results of his fellowship training.

43. Furthermore the Secretariat maintains close and direct contacts with Member States, through their delegations to the Board and the General Conference, and by visits of staff members on missions, attendances at conferences, etc., and it has been possible to obtain at least a general picture of the impact of the Agency's technical assistance to Member States.

44. Proper co-ordination in the provision of assistance is an important aspect of the Agency's programme. Apart from delays resulting from difficulties in securing the services of specially qualified experts, it sometimes happens that the laboratories for which the expert was requested have not been completed or equipped for the work which the expert is required to do. In other cases the value of the assistance has been diminished by premature requests by Member States and assistance consequently provided prematurely to meet these requests. This has been especially the case where the expert assignment is related to reactor projects such as health physics, reactor safety evaluation, etc. where, due to delays in the reactor construction programme, the expert, although assigned at the requested time and accepted by the requesting Government, is unable to give the full benefits of his expertise. The situation is being avoided as far as possible by greater use of follow-up missions which can keep the Agency informed of the progress of the programmes in the Member States concerned.

45. The provision of technical collaborators to work with Agency experts is an important factor, the non-realization of which has in some cases limited the effectiveness of technical assistance. Here again proper timing is important. Where the necessary scientific or technical personnel do not already exist, their preparation, perhaps by fellowship training, should be so arranged that they are available in the country when the expert takes up his assignment.

46. Another important aspect relates to the proper timing of the arrival of equipment provided by the Agency as part of its technical assistance activities. With a view to achieving this, a system of close co-ordination between the divisions in the Agency

concerned with various aspects of technical assistance and with the recipient Member States has been established to ensure timely arrival of the equipment.

Experts, visiting professors and equipment

47. There are great variations in the impact the Agency's expert advisers and visiting professors have been able to make. While in some cases an expert or visiting professor has had great difficulty in implementing his assignment, in other cases the expert has been able to make his assignment an outstanding success. Some examples of successful and less successful projects follow.

48. Several requests for advisers in over-all planning of atomic energy programmes have been met by the Agency. In general these assignments have been successful and the recommendations made by the experts have been well received and implemented by the Government. The assignments have included the elaboration of long-term programmes leading to the institution of a nuclear centre, and the establishment of priorities among various projects.

49. One Member State requested an expert in nuclear experimental physics to be assigned to the Faculty of Science of one of its universities for a period of one year and the services of a highly competent expert from a world renowned institute was secured. In consultation with the expert and Government authorities it was agreed to implement this project through a series of short visits of four to five weeks each by the expert combined with a close collaboration between the laboratories of the university and the institute. The project will be implemented over a period of two years but co-operation between the university and the institute will continue even after the project has been completed.

50. So far, the expert has made three visits to the university, during which he decided upon the equipment needed for the project and recommended the award of a fellowship to a research worker from the university to work in his laboratory on a subject which he could continue in his own university. The expert further recommended the visit of one of the professors from the university to the expert's institute under the Agency's exchange scheme. The results obtained to date from the implementation of the project suggest that, on projects of this nature, the system of short visits by experts is more effective than a single continuous assignment after which the expert's contacts with the visited institution are terminated. It is proposed to apply the experience gained from this project to other similar technical assistance projects in the future.

51. The Agency has engaged in several successful projects involving the applications of radioisotopes in agriculture. In some projects the Agency's experts have been able to set up laboratories in developing countries and initiate research programmes for the study of soil-plant relations, particularly the phosphorus up-take of rice. In one country an Agency expert assisted in developing a programme for the study of the genetic effects of radiation on cell tissues and of the influence of irradiation of seeds or growing plants on the rate of growth of agricultural crops. The expert participated in a training programme, and assisted in setting up the laboratories and in initiating the research programme.

52. In the application of radioisotopes in entomology, a scientist experienced in insect control by radiation was assigned to a Mediterranean country. The technical assistance project required that he should:

(a) Advise on the development of plans for testing radiation sterilization techniques for the irradiation of the Dacus fly, a parasite of the olive tree;

(b) Take part in research work in this respect; and

(c) Train national scientists in the research techniques to be used.

The expert has been working on techniques for rearing the Dacus fly in the laboratory as a preliminary step to the sterilization of the male and its subsequent release in large numbers in the Dacus fly population. The progress being made in this project could eventually be of substantial importance to the agricultural economy of the country concerned and of the neighbouring countries.

53. Advice on the industrial applications of radioisotopes has also been provided. An expert in this subject assigned to a developing country has been successful in introducing some significant applications of radioisotopes to various existing industries. He demonstrated the possibility of using neutron moisture probes to determine the moisture content of coconuts, cassava and bagasse, all of which are economically significant products in the country of assignment. Other possibilities were demonstrated for the use of radioisotopes in the mining, oil refining and manufacturing industries.

54. An important part of the Agency's technical assistance is in nuclear medicine. The purpose of this assistance is in most cases specific and limited, for instance the setting-up or extension of medical isotope laboratories, radioteletherapy units, the teaching of specific techniques or the initiation of research projects of special local importance. A highly specialized research scientist is not always the best choice for the job and often a versatile expert who can work on his own without auxiliary services and can adapt himself to the working conditions in the host country is to be preferred. Experts are often confronted with a number of problems outside their specialization, for instance in determining the most economic method of procuring isotopes from another country, in making local arrangements for manufacture and repair of essential equipment or in devising methods for safe disposal of radioactive waste. In spite of difficulties these medical projects are generally successful because of their specific and limited objectives.

55. The Agency's assistance is often requested in nuclear instrumentation. There is considerable need for experienced personnel and workshops for the maintenance and repair of nuclear instruments in Member States and in several cases the Agency's experts have been able to establish such facilities. Where, as happened in one case, the expert is requested before the project is ready for implementation, maximum benefit cannot be made of the expert's services.

56. In several projects in prospecting for and treatment of uranium minerals, experts have been able to establish excellent relations with the national authorities and good co-operation with their counterparts as well as to improve the type of equipment, plant and operational methods. An expert in aerial prospecting for uranium minerals, although acknowledged by the national authorities concerned as an excellent and well qualified specialist, was retarded in the early part of his assignment because of delays in arrival of the equipment necessary for the project. The delays occurred first in the shipment of the material and later in its clearance through customs. An expert to the same country provided under the Agency's regular programme to advise in uranium production was able to develop earlier work of a previous expert provided under EPTA, which enabled him to introduce improvements that were readily accepted by the local experts. On the basis of his project designs a pilot-scale uranium concentrate refining unit is now installed and in operation.

57. Some of the Agency's experts have been associated with reactor projects. In one case the expert, working under very difficult circumstances, was able not only to take a significant part in the construction and operation of a research reactor but also to train local operating and research personnel and to plan and implement the health physics organization of the reactor project. On the other hand, in another case the expert was not able to use his time fully because of delays in delivery of the reactor components and the delayed implementation of the reactor project.

58. Member States have often called on the Agency's assistance in health physics, and experts have been able to assist in planning the radiation protection service of several countries and in drawing up the relevant legislation and regulations as well as in training

local personnel. In addition, Member States have been assisted in health protection and waste disposal problems by short visits of staff members from the Agency. Assistance provided in health physics has generally been successful and well received, mainly because the problems are of a specific and limited character and have immediate importance.

59. Visiting professors in subjects related to atomic energy, such as nuclear physics, solid state physics, theoretical physics, experimental nuclear physics, neutron physics, nuclear spectroscopy as well as in radiobiology, radiochemistry and agricultural and medical applications of radioisotopes, have been provided to several countries. In most cases they have been successful in building up the interest of their students and have assisted in drawing up syllabi and in setting up laboratories for experimental and research purposes. In some projects, fellows have completed their training before the arrival of the visiting professor and were able to act as his assistants. In many cases visiting professors have made recommendations for the award of fellowships to students from the country of assignment.

60. In some cases, equipment provided in connection with the assignment of experts or visiting professors to enable them to implement their work has been of great importance to the project. In general, however, the provision of equipment has been limited for financial reasons.

Fellowships

61. The fellowship programme for 1962 has continued to provide a complete range of specialized training in the peaceful application of atomic energy within the budgetary limitations and with the assistance of acceptable Type II awards made available by an increasing number of host countries. Type II fellowships now exceed the number of fellowships financed from Agency funds.

62. During the year further attention has been given to the appraisal of the effectiveness of fellowship training through statistical studies of reports from fellows who have returned home. Such data is obtained from the Completed Fellowships Form which is sent to every fellow who has been back in his home country for at least six months. Such forms have been sent to 660 former fellows in 49 nominating countries and, of the 511 replies received, a detailed study reveals that some 490 fellows are now employed in their home countries and 422 indicated that their employment is related to the training received under the Agency's auspices. A further inquiry has been addressed to those fellows who have not replied to the initial request.

63. A special inquiry has been made in connection with a comprehensive appraisal of fellowship training requested by TAC for all United Nations agencies. For this purpose a brief uniform questionnaire has been devised for all United Nations fellows and an overall report based on these returns is now being prepared by TAB for TAC. Insofar as the Agency is concerned the questionnaire has been sent to 151 fellows (who have been back at least two years) in 32 Member States. The 131 replies which have been received and which are tabulated below give a reassuring indication of the effectiveness of the programme.

| | Question | Number of replies | |
|---|---|---|---|
| | | Yes | No |
| 1. | Are you now employed in your home country? | 126 | 5 |
| 2. | Is your employment related to your training? | 113 | 18 |
| 3. | Are your present responsibilities wider now than at the time of your fellowship? | 103 | 28 |
| 4. | Have you introduced new techniques or methods related to your training since your award? | 92 | 39 |

| | Question | Number of replies | |
|---|---|---|---|
| | | Yes | No |
| 5. | Are you engaged fully or part-time in teaching or training activities related to your field of training, since returning home? | 84 | 47 |
| 6. | Are you more active professionally within your field of training, since returning home? | 106 | 25 |

64. Other indications of achievements of Agency fellows both during their training programmes and upon their return home is given in theses and publications of original scientific work done by the fellows in the course of their training. In many cases, fellows have utilized the relatively brief period devoted to research at a university to satisfy simultaneously the requirements for advanced degrees. The acceptance of the thesis is in itself an indication of a high level of scholastic achievement. Contact with fellows is maintained through the Agency's Bulletin which has been requested by over two thirds of the trainees.

Training courses and mobile radioisotope laboratories

65. Training courses have been organized under EPTA for regional activities and the Agency's regular programme, both in co-operation with other organizations or under its own auspices. In almost all courses professional staff from the Agency have acted as scientific and technical advisers or lecturers. For many courses, in particular regional courses under EPTA, equipment for general experiments and books for each student have been provided. A variety of subjects have been covered in courses which in 1962 included nuclear metallurgy, nuclear theory, radionuclides in foods, and application of radioisotopes in medicine, animal sciences and in soil-plant relations.

66. Experience has shown that best results are obtained from regional courses of longer duration such as the first course in nuclear metallurgy, for which the Agency paid the travel costs and subsistence allowance for several professors. However, courses of short duration in advanced subjects have also proved to be successful from the standpoint of enrolments and results obtained. Such courses provide opportunities for young scientists to exchange ideas with experienced senior scientists. The Agency has received encouraging reports on its courses from host countries, from visiting lecturers and the course participants. Suggestions have been made in the light of experience so far gained, on the basis of which the Agency has modified the syllabi and experiments devised for future courses.

67. Reports on the work of the Agency's two mobile radioisotope laboratories illustrate their value as a means of training. They have been used mainly in places where no facilities were available at all for this type of training, and for demonstrations at education and research institutions and schools. In 1962 about 550 persons participated in training provided by the mobile radioisotope laboratories. Normally the Agency has provided an expert for the first month of operation in each country whose task has been to train local staff in the operation of the units. A difficulty which is generally encountered is the reluctance of requesting countries to bear the expenses for transportation of the unit by sea from the last user country.

## CONCLUSIONS

68. The impact of the Agency's programme of technical assistance depends not only on its quantity but even more on its quality. There is no single factor that determines the success of the assignment of an expert or visiting professor or the result of a fellowship or training course. A number of factors must be taken into account in order to achieve the desired result. The expert or visiting professor must not only have the necessary technical competence but must also be acceptable, flexible and endeavour to get the maximum

co-operation of local personnel. The importance of this aspect can hardly be over-emphasized. Furthermore, he must, if necessary, be able to work without the supporting facilities to which he is accustomed in his country. Some of the Agency's experts have shown much initiative and have been able to build workable equipment with the aid of parts acquired on the local junk market.

69. To ensure the success of an expert assignment the recipient Government must co-operate fully, provide the necessary financial and administrative support and competent counterpart personnel. This co-operation is not always forthcoming; for example in one case the only person trained in the expert's speciality was sent abroad on a fellowship at the time of the expert's arrival. In other cases the expert or visiting professor has not received sufficient administrative assistance due mainly to lack of competent bilingual personnel. The right timing of the arrival of the expert or visiting professor and the adequate and detailed description of the work he is expected to do is partly the responsibility of the Government and, although some difficulties have arisen in this respect, in most cases Governments have fully understood their importance and have contributed to the success of the projects.

70. With regard to requests for equipment, a peculiar situation sometimes exists in that, although there is a considerable need for equipment, similar equipment may be lying idle. This is sometimes due to the fact that such idle equipment can only be used in connection with other equipment which is not available and cannot be purchased because of lack of funds or of foreign exchange. Examples are known of substantial quantities of equipment which were inoperative because of the lack of minor parts which cannot be obtained. A great need of standardization has been noted and the seemingly trivial problems of voltage, cycle, connections, plugs, etc. cause difficulties in recipient countries out of all proportion to the technical problems involved. The need for equipment in some cases is such that Member States tend to consider the experts as secondary in importance to it.

71. The Agency's main functions in creating the conditions for a successful project are to identify the needs and to find and select a competent and flexible expert or visiting professor, brief him on his assignment, supply him in time with the necessary equipment and give him support and advice during his assignment. It would be desirable that the expert or visiting professor should have the opportunity to familiarize himself with his assignment, see what equipment is already available, and determine the type and technical specification of equipment to be provided by the Agency, before it is ordered. In most cases this cannot be done, either because it is not possible for financial and other reasons for experts to make a preliminary visit to the recipient country, or because the delivery times of the equipment are such that under these circumstances it would arrive in the recipient country too late to be of any use to the expert or visiting professor.

72. Success of a technical assistance project is the result of the combined efforts and the harmonious co-operation of all concerned: the expert, the visiting professor, the fellowship trainee and his host institution, the Agency and the recipient Government. It depends upon the proper timing and formulation of requests, the provision of the necessary facilities with which the expert or visiting professor can work, the timely provision of essential equipment and the relationship of the individual project with the long-term programme of atomic energy development of the country concerned. By constant attention to these factors and other related details, the Agency's programme of technical assistance in all its forms is likely to make the most effective impact on the development and peaceful uses of atomic energy in Member States.

ANNEX I

Technical assistance provided in 1962

(From Agency and EPTA funds, and resources in kind)

| Country or region | Technical assistance from monetary resources | | | Technical assistance from resources in kind (estimate) | | | | Total (estimate) | Fellowships and experts provided from all resources | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Agency | EPTA | Sub-total | Fellowships Type II | Experts | Equipment | Sub-total | | Fellowships Types I and II | | Experts and visiting professors | |
| | $ | $ | $ | $ | $ | $ | $ | $ | Number | Man-months | Number | Man-months |
| Country programmes | | | | | | | | | | | | |
| Afghanistan | 3 | 31 362 | 31 365 | 14 500 | | | 14 500 | 45 865 | 3 | 93a/ | 2 | 12½ |
| Argentina | 60 873 | 60 529 | 121 402 | 7 000 | | 17 500 | 24 500 | 145 902 | 14 | 129 | 12 | 38 |
| Austria | 17 058 | | 17 058 | 8 000 | 410 | | 8 410 | 25 468 | 6 | 43 | 3 | 6½ |
| Brazil | 16 395 | 50 511 | 66 906 | | | 35 000 | 35 000 | 101 906 | 6 | 70 | 7 | 50½ |
| Bulgaria | 26 276 | | 26 276 | 9 200 | | | 9 200 | 35 476 | 17 | 156 | | |
| Burma | 3 908 | 22 415 | 26 323 | | | | | 26 323 | 1 | 4 | 1 | 3 |
| Ceylon | 11 310 | 19 724 | 31 034 | | | 12 500 | 12 500 | 43 534 | 1 | 3 | 3 | 27 |
| Chile | | 34 471 | 34 471 | 5 000 | | | 5 000 | 39 471 | 3 | 36 | 2 | 3 |
| China | 26 401 | 40 583 | 66 984 | 20 500 | | | 20 500 | 87 484 | 11 | 106 | 4 | 13 |
| Colombia | 4 505 | 21 842 | 26 347 | 10 300 | | | 10 300 | 36 647 | 9 | 96 | 1 | 7½ |
| Czechoslovak Socialist Republic | 21 343 | | 21 343 | 7 300 | | | 7 300 | 28 643 | 13 | 110 | | |
| El Salvador | 1 700 | 22 222 | 23 922 | | | | | 23 922 | 3 | 28 | 1 | 8½ |
| Ecuador | 9 987 | | 9 987 | 8 000 | | | 8 000 | 17 987 | 4 | 90b/ | | |
| Ghana | 24 699 | 3 500 | 28 199 | | | | | 28 199 | 1 | 12 | 3 | 12 |
| Greece | 15 113 | 74 446 | 89 559 | 11 800 | 590 | | 12 390 | 101 949 | 18 | 168 | 7 | 35½ |
| Guatemala | | | | | | | | | 3 | 34 | 1 | 3 |
| Haiti | 5 836 | 20 844 | 26 680 | | | | | 26 680 | | | | |
| Hungary | 18 721 | | 18 721 | 10 400 | | | 10 400 | 29 121 | 16 | 109 | | |
| Iceland | 3 838 | | 3 838 | | | 6 000 | 6 000 | 9 838 | | | 2 | 7 |
| India | 18 440 | 39 000 | 57 440 | 19 000 | | | 19 000 | 76 440 | 21 | 197 | | |
| Indonesia | 54 579 | 50 169 | 104 748 | 32 000 | | | 32 000 | 136 748 | 11 | 384c/ | 3 | 15 |
| Iran | 39 935 | 54 161 | 94 096 | 36 800 | | | 36 800 | 130 896 | 19 | 195 | 4 | 20½ |
| Iraq | 45 356 | 29 400 | 74 756 | 28 800 | | | 28 800 | 103 556 | 22 | 234 | 2 | 2½ |
| Israel | 28 051 | 38 004 | 66 055 | 2 300 | 990 | | 3 290 | 69 345 | 6 | 55 | 3 | 17½ |
| Italy | 10 401 | | 10 401 | 4 800 | | | 4 800 | 15 201 | 5 | 34 | 1 | 8 |
| Japan | 5 203 | 9 121 | 14 324 | 8 500 | 9 700 | | 18 200 | 32 524 | 7 | 66 | 6 | 8 |
| Korea, Republic of | 23 065 | 42 022 | 65 087 | 34 200 | | 11 000 | 45 200 | 110 287 | 17 | 173 | 4 | 22 |
| Lebanon | | 10 500 | 10 500 | | | | | 10 500 | 2 | 24 | | |
| Mali | | 2 750 | 2 750 | | | | | 2 750 | | | 1 | 1 |
| Mexico | 67 861 | 24 475 | 92 336 | 9 000 | | | 9 000 | 101 336 | 7 | 60 | 7 | 36½ |
| Monaco | 255 | | 255 | | | | | 255 | 1 | 1 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Zealand | 1 602 | | 1 602 | 5 000 | | | 5 000 | 6 602 | 4 | 27 | | |
| Pakistan | 48 952 | 46 328 | 95 280 | 7 300 | 2 050 | 11 500 | 20 850 | 116 130 | 13 | 133 | 10 | 39 |
| Panama | | 18 | 18 | | | | | 18 | | | | |
| Paraguay | 18 153 | | 18 153 | | | | | 18 153 | 1 | 10 | 1 | 2 |
| Peru | | 3 000 | 3 000 | | | | | 3 000 | 1 | 12 | | |
| Philippines | 7 161 | 91 522 | 98 683 | 5 000 | 1 820 | 28 000 | 34 820 | 133 503 | 11 | 108 | 8 | 26 |
| Poland | 37 058 | 13 000 | 50 058 | 32 100 | | | 32 100 | 82 158 | 31 | 259 | | |
| Portugal | 1 866 | | 1 866 | 4 000 | | 46 000 | 50 000 | 51 866 | 2 | 24 | 1 | 1½ |
| Romania | 13 908 | | 13 908 | 12 700 | | | 12 700 | 26 608 | 11 | 87 | | |
| Senegal | | 36 712 | 36 712 | | | | | 36 712 | 2 | 4 | 2 | 1½ |
| South Africa | 5 948 | | 5 948 | 10 000 | | | 10 000 | 15 948 | 4 | 46 | | |
| Spain | | | | 2 000 | | | 2 000 | 2 000 | 1 | 9 | | |
| Sudan | 10 290 | 3 500 | 13 790 | | | | | 13 790 | 2 | 22 | 1 | 6 |
| Switzerland | 4 000 | | 4 000 | | | | | 4 000 | 1 | 10 | | |
| Thailand | 85 537 | 45 359 | 130 896 | 9 100 | 2 010 | | 11 110 | 142 006 | 13 | 140 | 8 | 24 |
| Tunisia | 3 923 | 29 194 | 33 117 | 15 000 | 1 380 | | 16 380 | 49 497 | 6 | 172d/ | 3 | 14 |
| Turkey | 62 082 | 33 972 | 96 054 | 20 000 | | | 20 000 | 116 054 | 11 | 100 | 11 | 59 |
| United Arab Republic | 34 633 | 38 828 | 73 461 | 33 300 | | 30 000 | 63 300 | 136 761 | 22 | 193 | 5 | 23 |
| Uganda | | 9 082 | 9 082 | | | | | 9 082 | 1 | 4 | 1 | 1½ |
| Venezuela | 6 951 | 10 010 | 16 961 | 7 300 | | | 7 300 | 24 261 | 6 | 66 | | |
| Viet-Nam | 13 167 | 6 360 | 19 527 | | | | | 19 527 | 1 | 24 | | |
| Yugoslavia | 20 931 | 24 699 | 45 630 | 30 350 | 740 | | 31 090 | 76 720 | 34 | 256 | 5 | 3 |
| Sub-total | 937 374 | 1 101 135 | 2 038 509 | 480 550 | 19 690 | 197 500 | 697 740 | 2 736 249 | 428 | 4 446 | 136 | 558½ |
| International and regional training courses | | | | | | | | | | | | |
| Africa | | 2 283 | 2 283 | ... | ... | ... | ... | 2 283 | | | | |
| Americas | 25 668 | | 25 668 | ... | ... | ... | ... | 25 668 | 44 | 66 | 22 | 177 |
| Europe | 36 730 | 39 757 | 76 487 | ... | ... | ... | ... | 76 487 | 52 | 77 | 12 | 12½ |
| Middle East | 4 000 | 2 991 | 6 991 | ... | ... | ... | ... | 6 991 | | | 10 | 2½ |
| Sub-total | 66 398 | 45 031 | 111 429 | ... | ... | ... | ... | 111 429 | 96 | 143 | 44 | 192 |
| TOTAL | 1 003 772 | 1 146 166 | 2 149 938 | ... | ... | ... | ... | 2 847 678 | 524 | 4 589 | 180e/ | 750½ |

a/ Includes 72 man-months in respect of one long-term award.

b/ Includes 72 man-months in respect of one long-term award.

c/ Includes 312 man-months in respect of five long-term awards.

d/ Includes 144 man-months in respect of three long-term awards.

e/ Experts and visiting professors whose services were financed from Agency and EPTA funds have been counted twice. Thus, totals in this Annex do not always agree with those in Annex II.

# ANNEX II

## Experts and visiting professors engaged in technical assistance projects in 1962: classified by nationality

| Country of origin | Agency | EPTA | Cost-free | Total |
|---|---|---|---|---|
| Argentina | 1 | 3 | | 4 |
| Australia | | 2 | | 2 |
| Austria | 2 | 2 | | 4 |
| Belgium | 1 | 2 | | 3 |
| Brazil | 4 | 1 | | 5 |
| Canada | 1 | 2 | | 3 |
| Chile | 2 | | | 2 |
| Czechoslovak Socialist Republic | 1 | 2 | | 3 |
| Denmark | 1 | 1 | | 2 |
| France | 4 | 4 | 4 | 12 |
| Germany, Federal Republic of | 6 | 3 | | 9 |
| India | 1 | 4 | | 5 |
| Israel | 1 | | | 1 |
| Italy | | 1 | | 1 |
| Japan | 1 | 1 | | 2 |
| Korea, Republic of | | 1 | | 1 |
| Netherlands | 2 | | | 2 |
| New Zealand | 1 | 1 | | 2 |
| Norway | 5 | 3 | | 8 |
| Sweden | 1 | 1 | | 2 |
| Union of Soviet Socialist Republics | 5 | | | 5 |
| United Kingdom of Great Britain and Northern Ireland | 18 | 14 | 6 | 38 |
| United States of America | 27 | 21 | 4 | 52 |
| Yugoslavia | 3 | | | 3 |
| TOTAL | 88[a] | 69[b] | 14 | 171[c] |

a/ 72 experts, nine visiting professors and seven short-term consultants for the Reactor Hazards Evaluation Missions.

b/ 51 experts and 18 visiting professors.

c/ Any expert or visiting professor who was separately employed by both the Agency and EPTA is included separately in respect of each such employment.

ANNEX III

Experts and visiting professors engaged in technical assistance projects in 1962: classified by field of activity

| Field of activity | Agency experts | Visiting professors | EPTA experts | Cost-free experts | Total |
|---|---|---|---|---|---|
| General atomic energy development | 4 | | 1 | 1 | 6 |
| Prospecting, mining and processing of nuclear raw materials | 20 | | 5 | 1 | 26 |
| Fabrication and reprocessing of nuclear fuels | 2 | | 3 | | 5 |
| Nuclear research laboratories and centres | 2 | 5 | 4 | 2 | 13 |
| Nuclear research, scientific studies and laboratory services | 18 | 18 | 6 | 4 | 46 |
| Nuclear reactors | 2 | 2 | 14 | 4 | 22 |
| Applications of radioisotopes: | | | | | |
| To agriculture | 5 | 1 | 13 | | 19 |
| To medicine | 8 | 1 | 10 | | 19 |
| Other | 2 | | 2 | | 4 |
| Health, safety and waste disposal | 7 | 1 | 9 | 3 | 20 |
| TOTAL | 70 | 28 | 67 | 15 | 180[a] |

a/ Experts and visiting professors whose services were financed from Agency and EPTA funds have been counted twice; those who have served in more than one country are counted under each country of service. Thus, totals in this Annex do not always agree with those in Annex II.

ANNEX IV

Fellowships awarded under the 1962 programme:
classified by place of study

| Place of study | Agency | EPTA | Type II | Total |
|---|---|---|---|---|
| Countries | | | | |
| Argentina | | 1 | 2 | 3 |
| Australia | 4 | 2 | | 6 |
| Austria | 2 | 1 | | 3 |
| Belgium | 2 | 1 | 5 | 8 |
| Brazil | | 1 | 4 | 5 |
| Canada | 5 | 1 | | 6 |
| Chile | 2 | | | 2 |
| Czechoslovak Socialist Republic | | | 13 | 13 |
| Denmark | 6 | 2 | 5 | 13 |
| France | 18 | 8 | 12 | 38 |
| Germany, Federal Republic of | 8 | 1 | 5 | 14 |
| Hungary | | 1 | 3 | 4 |
| India | | | 4 | 4 |
| Israel | 3 | | | 3 |
| Italy | | 2 | 23 | 25 |
| Japan | 3 | 6 | 10 | 19 |
| Mexico | 1 | | | 1 |
| Netherlands | | 2 | 2 | 4 |
| Norway | 5 | | | 5 |
| Poland | | | 7 | 7 |
| Romania | | | 1 | 1 |
| Spain | | 1 | 1 | 2 |
| Sweden | 8 | 6 | | 14 |
| Switzerland | 2 | | | 2 |
| Turkey | 1 | | | 1 |
| Union of Soviet Socialist Republics | 9 | 5 | 18 | 32 |
| United Arab Republic | | | 1 | 1 |
| United Kingdom of Great Britain and Northern Ireland | 43 | 28 | | 71 |
| United States of America | 12 | 42 | 49 | 103 |
| Yugoslavia | | | 3 | 3 |
| Sub-total | 134 | 111 | 168 | 413[a] |
| International and regional training courses | | | | |
| Americas | 45 | | | 45 |
| Europe | 27 | 24 | | 51 |
| Sub-total | 72 | 24 | | 96[a] |
| Other | | | | |
| Agency | 9 | 1 | | 10 |
| CERN | 5 | 1 | | 6 |
| NORA | 1 | | | 1 |
| Uppsala courses | 1 | | | 1 |
| Sub-total | 16 | 2 | | 18 |
| TOTAL | 222 | 137 | 168 | 527[a] |

a/ Fellowship-holders who have visited more than one country as part of their study programmes are counted under each country visited. Thus, totals in this Annex do not always agree with those in Table 4 and in Annex I.

ANNEX V

Fellowships awarded under the 1962 programme

A. Classified by nationality of the recipients

| Country of origin | Agency | | | | | | EPTA | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type I | | Type II | | Sub-total | | | | | |
| | Number | Man-months | Number | Man-months | Number | Man-months | Number | Man-months | Number | Man-months |
| Afghanistan | | | 3 | 93 | 3 | 93 | | | 3 | 93 |
| Argentina | 4 | 48 | 4 | 29 | 8 | 77 | 6 | 52 | 14 | 129 |
| Austria | 4 | 23 | 2 | 20 | 6 | 43 | | | 6 | 43 |
| Brazil | 1 | 10 | | | 1 | 10 | 5 | 60 | 6 | 70 |
| Bulgaria | 11 | 101 | 6 | 55 | 17 | 156 | | | 17 | 156 |
| Burma | | | | | | | 1 | 4 | 1 | 4 |
| Ceylon | | | | | | | 1 | 3 | 1 | 3 |
| Chile | | | 1 | 12 | 1 | 12 | 2 | 24 | 3 | 36 |
| China | 4 | 32 | 6 | 62 | 10 | 94 | 1 | 12 | 11 | 106 |
| Colombia | 2 | 16 | 4 | 44 | 6 | 60 | 3 | 36 | 9 | 96 |
| Czechoslovak Socialist Republic | 10 | 86 | 3 | 24 | 13 | 110 | | | 13 | 110 |
| El Salvador | 1 | 6 | | | 1 | 6 | 2 | 22 | 3 | 28 |
| Ecuador | 3 | 30 | 1 | 60 | 4 | 90 | | | 4 | 90 |
| Ghana | | | | | | | 1 | 12 | 1 | 12 |
| Greece | 3 | 26 | 7 | 60 | 10 | 86 | 8 | 82 | 18 | 168 |
| Guatemala | | | | | | | 3 | 34 | 3 | 34 |
| Hungary | 10 | 67 | 6 | 42 | 16 | 109 | | | 16 | 109 |
| India | 7 | 55 | 6 | 46 | 13 | 101 | 8 | 96 | 21 | 197 |
| Indonesia | | | 5 | 312 | 5 | 312 | 6 | 72 | 11 | 384 |
| Iran | 7 | 64 | 11 | 119 | 18 | 183 | 1 | 12 | 19 | 195 |
| Iraq | 4 | 36 | 11 | 116 | 15 | 152 | 7 | 82 | 22 | 234 |
| Israel | 4 | 31 | 1 | 12 | 5 | 43 | 1 | 12 | 6 | 55 |
| Italy | 3 | 22 | 2 | 12 | 5 | 34 | | | 5 | 34 |
| Japan | 2 | 16 | 4 | 38 | 6 | 54 | 1 | 12 | 7 | 66 |
| Korea, Republic of | 3 | 22 | 11 | 115 | 14 | 137 | 3 | 36 | 17 | 173 |
| Lebanon | | | | | | | 2 | 24 | 2 | 24 |
| Mexico | 2 | 15 | 3 | 33 | 5 | 48 | 2 | 12 | 7 | 60 |
| Monaco | 1 | 1 | | | 1 | 1 | | | 1 | 1 |
| Morocco | | | | | | | 3 | 30 | 3 | 30 |
| New Zealand | 2 | 16 | 2 | 11 | 4 | 27 | | | 4 | 27 |
| Pakistan | 6 | 54 | 2 | 24 | 8 | 78 | 5 | 55 | 13 | 133 |
| Paraguay | 1 | 10 | | | 1 | 10 | | | 1 | 10 |
| Peru | | | | | | | 1 | 12 | 1 | 12 |
| Philippines | 4 | 30 | 1 | 12 | 5 | 42 | 6 | 66 | 11 | 108 |
| Poland | 13 | 106 | 13 | 108 | 26 | 214 | 5 | 45 | 31 | 259 |
| Portugal | | | 2 | 24 | 2 | 24 | | | 2 | 24 |
| Romania | 5 | 42 | 6 | 45 | 11 | 87 | | | 11 | 87 |
| Senegal | | | | | | | 2 | 4 | 2 | 4 |
| South Africa | 2 | 22 | 2 | 24 | 4 | 46 | | | 4 | 46 |
| Spain | | | 1 | 9 | 1 | 9 | | | 1 | 9 |
| Sudan | 1 | 10 | | | 1 | 10 | 1 | 12 | 2 | 22 |
| Switzerland | 1 | 10 | | | 1 | 10 | | | 1 | 10 |
| Thailand | 7 | 68 | 3 | 36 | 10 | 104 | 3 | 36 | 13 | 140 |
| Tunisia | | | 3 | 144 | 3 | 144 | 3 | 28 | 6 | 172 |
| Turkey | 4 | 31 | 7 | 69 | 11 | 100 | | | 11 | 100 |
| United Arab Republic | 7 | 54 | 15 | 139 | 22 | 193 | | | 22 | 193 |
| Uganda | | | | | | | 1 | 4 | 1 | 4 |
| Venezuela | 2 | 20 | 2 | 22 | 4 | 42 | 2 | 24 | 6 | 66 |
| Viet-Nam | | | | | | | 1 | 24 | 1 | 24 |
| Yugoslavia | 9 | 65 | 12 | 106 | 21 | 171 | 13 | 85 | 34 | 256 |
| TOTAL | 150 | 1245 | 168 | 2077 | 318 | 3322 | 110 | 1124 | 428 | 4446 |

B. Participants in international and regional training courses

| Agency | | | | | | EPTA | | Total | |
|---|---|---|---|---|---|---|---|---|---|
| Type I | | Type II | | Sub-total | | | | | |
| Number | Man-months | Number | Man-months | Number | Man-months | Number | Man-months | Number | Man-months |
| 72 | 95 | | | 72 | 95 | 24 | 48 | 96 | 143 |

ANNEX VI

Cumulative statement of the technical assistance provided during the years 1958-1962 from Agency and EPTA funds and resources in kind

(in thousands of dollars)

A. Country projects

| Country | Experts and visiting professors | | | Equipment | | | Fellowships and research fellowships | | | Total | | | Grand total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EPTA | Agency | Free | EPTA | Agency | Free | EPTA | Agency Type I | Agency Type II | EPTA | Agency | Free | |
| Afghanistan | 4.3 | 16.6 | | 27.1 | | 25.0 | 2.3 | 19.3 | 20.1 | 33.7 | 35.9 | 45.1 | 114.7 |
| Argentina | 73.2 | 94.8 | | 8.0 | 1.1 | 81.5 | 81.9 | 27.7 | 97.4 | 163.1 | 123.6 | 178.9 | 465.6 |
| Austria | | 47.4 | 0.8 | | 10.9 | | | 42.1 | 40.3 | | 100.4 | 41.1 | 141.5 |
| Brazil | 50.7 | 131.7 | | 28.0 | 50.8 | 46.0 | 59.0 | 22.1 | 31.0 | 137.7 | 204.6 | 77.0 | 419.3 |
| Bulgaria | | | | | | | | 68.0 | 38.1 | | 68.0 | 38.1 | 106.1 |
| Burma | 52.1 | 1.9 | | 22.9 | 3.9 | | 14.1 | 10.0 | 36.7 | 89.1 | 15.8 | 36.7 | 141.6 |
| Ceylon | 39.7 | 33.0 | | 11.8 | 3.0 | 12.5 | 7.5 | | 9.5 | 59.0 | 36.0 | 22.0 | 117.0 |
| Chile | 16.1 | | | 17.3 | | | 16.0 | 7.5 | 11.0 | 49.4 | 7.5 | 11.0 | 67.9 |
| China | 41.7 | 39.4 | 5.9 | 12.2 | 2.3 | | 20.5 | 52.2 | 123.5 | 74.4 | 93.9 | 129.4 | 297.7 |
| Colombia | 7.2 | 9.7 | | | | | 19.1 | 4.6 | 16.3 | 26.3 | 14.3 | 16.3 | 56.9 |
| Czechoslovak Socialist Republic | | | | | | | | 80.5 | 51.0 | | 80.5 | 51.0 | 131.5 |
| Denmark | | 12.9 | | | | | | 18.3 | 13.5 | | 31.2 | 13.5 | 44.7 |
| Ecuador | | | | | | | 5.2 | 13.3 | 28.0 | 5.2 | 13.3 | 28.0 | 46.5 |
| El Salvador | 12.2 | | | | | | 10.0 | 10.2 | | 22.2 | 10.2 | | 32.4 |
| Finland | | 0.3 | | | | | 1.8 | 7.0 | 29.2 | 1.8 | 7.3 | 29.2 | 38.3 |
| France | | | | | | | | 2.5 | 10.0 | | 2.5 | 10.0 | 12.5 |
| Germany, Federal Republic of | | 1.0 | | | 0.6 | | | 1.4 | | | 3.0 | | 3.0 |
| Ghana | | 24.7 | | | | | 3.5 | | | 3.5 | 24.7 | | 28.2 |
| Greece | 83.3 | 49.6 | 1.0 | | 6.8 | 27.0 | 40.4 | 28.0 | 69.7 | 123.7 | 84.4 | 97.7 | 305.8 |
| Guatemala | 5.8 | | | 2.7 | | | 12.3 | | 7.3 | 20.8 | | 7.3 | 28.1 |
| Haiti | | | | | 5.8 | | | | | | 5.8 | | 5.8 |
| Hungary | | | | | | | | 124.9 | 54.8 | | 124.9 | 54.8 | 179.7 |
| Iceland | | 12.4 | | | 9.8 | 32.0 | | | 5.0 | | 22.2 | 37.0 | 59.2 |
| India | | | | | | | 71.3 | 38.0 | 47.1 | 71.3 | 38.0 | 47.1 | 156.4 |
| Indonesia | 34.7 | 68.3 | 3.2 | 9.0 | 13.8 | | 41.5 | 35.6 | 306.1 | 85.2 | 117.7 | 309.3 | 512.2 |
| Iran | 77.3 | 46.9 | | 4.6 | | | 10.2 | 65.9 | 86.1 | 92.1 | 112.8 | 86.1 | 291.0 |
| Iraq | | 23.9 | | 12.4 | | | 29.4 | 34.0 | 60.7 | 41.8 | 57.9 | 60.7 | 160.4 |
| Israel | 32.6 | 13.0 | 4.5 | 12.0 | 6.2 | 52.0 | 20.4 | 14.8 | 13.6 | 65.0 | 34.0 | 70.1 | 169.1 |
| Italy | | 9.0 | | | | | | 81.6 | 71.9 | | 90.6 | 71.9 | 162.5 |
| Japan | 3.6 | 8.2 | 19.9 | | | | 48.1 | 95.0 | 125.0 | 51.7 | 103.2 | 144.9 | 299.8 |
| Kenya | | | | 2.3 | | | | | | 2.3 | | | 2.3 |
| Korea, Republic of | 52.1 | 40.1 | | | 13.4 | 11.0 | 23.9 | 110.0 | 158.7 | 76.0 | 163.4 | 169.7 | 409.1 |
| Lebanon | | | | | | | 13.7 | | | 13.7 | | | 13.7 |
| Mali | 2.8 | | | | | | | | | 2.8 | | | 2.8 |
| Mexico | 22.7 | 54.2 | | 0.9 | 13.6 | | 16.0 | 38.6 | 44.3 | 39.6 | 106.4 | 44.3 | 190.3 |
| Monaco | | | | | | | | 4.1 | | | 4.1 | | 4.1 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 7.5 | | 8.0 | 10.5 | 4.6 | 11.2 | 26.3 |
| Netherlands | | | | | | | | 10.7 | | | 10.7 | | 10.7 |
| New Zealand | | | | | | | | 12.7 | 10.0 | | 12.7 | 10.0 | 22.7 |
| Nicaragua | | | | | | | | 5.8 | | | 5.8 | | 5.8 |
| Norway | | | | | | | | 5.3 | | | 5.3 | | 5.3 |
| Pakistan | 77.9 | 54.3 | 7.7 | 24.2 | 30.1 | 11.5 | 24.3 | 44.2 | 36.3 | 126.4 | 128.6 | 55.5 | 310.5 |
| Paraguay | | 10.5 | | | 4.7 | | | 9.1 | 8.0 | | 24.3 | 8.0 | 32.3 |
| Peru | | | | | | | 14.9 | | 14.3 | 14.9 | | 14.3 | 29.2 |
| Philippines | 51.5 | 13.3 | 5.1 | 20.3 | 19.0 | 49.0 | 79.3 | 51.9 | 70.1 | 151.1 | 84.2 | 124.2 | 359.5 |
| Poland | | 10.6 | | | | | 14.4 | 152.7 | 115.3 | 14.4 | 163.3 | 115.3 | 293.0 |
| Portugal | | 1.9 | | | | 46.0 | | 2.9 | 9.0 | | 4.8 | 55.0 | 59.8 |
| Romania | | | | | | | | 30.2 | 33.1 | | 30.2 | 33.1 | 63.3 |
| Senegal | 4.4 | | | 31.0 | | | 2.7 | | | 38.1 | | | 38.1 |
| Spain | | | | | | | | 12.7 | 26.4 | | 12.7 | 26.4 | 39.1 |
| South Africa | | | | | | | | 34.9 | | | 34.9 | | 34.9 |
| Sudan | | 7.4 | | | 10.8 | | 3.5 | 3.0 | 5.0 | 3.5 | 21.2 | 5.0 | 29.7 |
| Sweden | | | | | | | | 8.9 | | | 8.9 | | 8.9 |
| Switzerland | | | | | | | | 9.6 | 7.5 | | 9.6 | 7.5 | 17.1 |
| Thailand | 117.7 | 95.6 | 2.2 | 4.8 | 13.1 | | 52.6 | 78.3 | 98.4 | 175.1 | 187.0 | 100.6 | 462.7 |
| Tunisia | 16.7 | 18.1 | 3.2 | 6.8 | 11.3 | | 7.5 | 0.1 | 18.1 | 31.0 | 29.5 | 21.3 | 81.8 |
| Turkey | 53.2 | 110.7 | 0.6 | 18.4 | 29.3 | 37.0 | 9.8 | 63.5 | 101.1 | 81.4 | 203.4 | 138.7 | 423.5 |
| Uganda | 3.4 | | | 2.7 | | | 3.0 | | | 9.1 | | | 9.1 |
| United Arab Republic | 7.8 | 44.2 | 5.6 | 31.0 | 32.4 | 39.0 | 24.8 | 92.4 | 191.7 | 63.6 | 169.0 | 236.3 | 468.9 |
| United States of America | | | | | | | | 2.6 | | | 2.6 | | 2.6 |
| Uruguay | | | | 2.2 | | | 5.8 | | | 8.0 | | | 8.0 |
| Venezuela | | 21.6 | | | 30.7 | | 15.8 | 7.3 | 37.2 | 15.8 | 59.6 | 37.2 | 112.6 |
| Viet-Nam | | 10.0 | | 4.0 | 3.2 | | 6.4 | 0.1 | | 10.4 | 13.2 | | 23.6 |
| Yugoslavia | 6.2 | 33.8 | 2.0 | 17.4 | 0.6 | | 131.2 | 118.1 | 115.5 | 154.8 | 152.5 | 117.5 | 424.8 |
| TOTAL[a/] | 953.9 | 1171.6 | 64.9 | 334.0 | 331.2 | 469.5 | 971.6 | 1814.2 | 2510.9 | 2259.5 | 3316.7 | 3045.3 | 8621.5 |

a/ Costs of the mobile laboratories are included under the columns Experts and visiting professors and Equipment financed from Agency funds.

B. International and regional training courses

| Region | EPTA | Agency | Total |
|---|---|---|---|
| Africa | | 4.2 | 4.2 |
| Americas | | 56.6 | 56.6 |
| Asia and Far East | | 15.3 | 15.3 |
| Europe | 39.8 | 60.7 | 100.5 |
| Middle East | 52.0 | 22.1 | 74.1 |
| TOTAL | 91.8 | 158.9 | 250.7 |

C. Summary

| | |
|---|---|
| Technical assistance provided from Agency and EPTA funds | 5826.9 |
| Estimated value of assistance in kind (excluding Governments' contributions to international and regional training courses) | 3045.3 |
| Estimated value of the technical assistance provided during the years 1958-1962 from all resources | 8872.2 |