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DEVELOPMENT AND INTERNATIONAL ECONOMIC CO-OPERATION:  
TRADE AND DEVELOPMENT

Development aspects of the reverse transfer of technology

Note by the Secretary-General

1. In paragraph 3 of its resolution 40/191 of 17 December 1985, the General Assembly requested the Secretary-General of the United Nations Conference on Trade and Development (UNCTAD) to convene a meeting of governmental experts to review the current situation with respect to all aspects of the international migration of skilled personnel from developing countries; the governmental experts were to focus, in their study, on the nature, scale and effect of such flows, taking into account the concerns of all parties, with a view to proposing to the Conference and, as appropriate, other international organizations, further work that they might carry out to mitigate the adverse consequences of this phenomenon, especially as it affected the developing countries, also taking into account, as appropriate, the work done so far by governmental expert groups, and any other relevant material. The Fourth Meeting of Governmental Experts on the Reverse Transfer of Technology was accordingly held at Geneva from 14 to 18 March 1988.

2. In paragraph 4 of the same resolution, the Assembly requested the Secretary-General of UNCTAD to prepare studies providing: (a) a review of the existing situation with respect to the international migration of skilled personnel from developing countries based on the most recently available and generally acceptable statistics; and (b) a comprehensive bibliography of current literature in this field. These studies were presented to the Fourth Meeting in documents TD/B/AC.35/16 and TD/B/AC.35/17.

\* A/43/50.

3. At the second part of its thirty-fourth session (728th meeting, held on 3 May 1988), the Trade and Development Board took note of the report of the Fourth Meeting of Governmental Experts on the Reverse Transfer of Technology (TD/B/1169-TD/B/AC.35/18). This report is submitted in response to paragraph 6 of General Assembly resolution 40/191 (see annex). At the same meeting, the Board adopted its decision 353 (XXXIV) whereby it recommended to the General Assembly a draft resolution for adoption. That decision will be included in the report of the Board on the second part of its thirty-fourth session (A/43/15).

ANNEX

Report of the Fourth Meeting of Governmental Experts  
on the Reverse Transfer of Technology

(Geneva, 14 to 18 March 1988)

CONTENTS

|  | <u>Paragraphs</u> | <u>Page</u> |
|--|-------------------|-------------|
| I. INTRODUCTION .....  | 1 - 4             | 4           |
| II. CURRENT SITUATION WITH RESPECT TO ALL ASPECTS OF THE<br>INTERNATIONAL MIGRATION OF SKILLED PERSONNEL FROM<br>DEVELOPING COUNTRIES, FOCUSING ON THE NATURE, SCALE AND<br>EFFECT OF SUCH FLOWS, TAKING INTO ACCOUNT THE CONCERNS OF<br>ALL PARTIES, WITH A VIEW TO PROPOSING TO THE CONFERENCE<br>AND, AS APPROPRIATE, OTHER INTERNATIONAL ORGANIZATIONS,<br>FURTHER WORK THAT MAY BE CARRIED OUT TO MITIGATE THE<br>ADVERSE CONSEQUENCES OF THIS PHENOMENON, ESPECIALLY AS IT<br>AFFECTS THE DEVELOPING COUNTRIES, ALSO TAKING INTO<br>ACCOUNT, AS APPROPRIATE, THE WORK DONE THUS FAR BY<br>GOVERNMENTAL EXPERT GROUPS, AND ANY OTHER RELEVANT<br>MATERIAL (agenda item 3) ..... | 5 - 73            | 5           |
| III. ORGANIZATIONAL MATTERS .....  | 74 - 82           | 20          |
| APPENDIX. Agreed conclusions and recommendations .....   |                   | 23          |

## I. INTRODUCTION

1. The General Assembly, in its resolution 40/191 of 17 December 1985, requested the Secretary-General of the United Nations Conference on Trade and Development (UNCTAD) to convene a meeting of governmental experts to review the current situation with respect to all aspects of the international migration of skilled personnel from developing countries; the governmental experts were to focus, in their study, on the nature, scale and effect of such flows, taking into account the concerns of all parties, with a view to proposing to the Conference and, as appropriate, other international organizations, further work that they might carry out to mitigate the adverse consequences of this phenomenon, especially as it affected the developing countries, also taking into account, as appropriate, the work done so far by governmental expert groups, and any other relevant material.
2. The Fourth Meeting of Governmental Experts on the Reverse Transfer of Technology was accordingly convened at the Palais des Nations, Geneva, and held from 14 to 18 March 1988.
3. During its session, the Fourth Meeting of Governmental Experts held six plenary meetings. At their 4th plenary meeting, the experts decided to set up a contact group of the Chairman.

### Introductory statement

4. The Deputy Secretary-General of UNCTAD recalled the co-operative spirit in which General Assembly resolution 40/191 had been adopted, and welcomed in particular the participation in the Meeting of some countries from a regional group that had been absent from three previous expert group meetings. Recent economic and technological changes had, by altering the skill profiles of various occupations, increased the importance of skill formation and utilization. Skill accumulation had become indispensable for growth and development in all countries, particularly developing countries, and the latter had achieved impressive gains in that respect, allowing further diversification of their exports into manufactured products, including skill-intensive manufactures. Between 1970 and 1982 the proportion of manufactures in the non-oil exports of developing countries, and their share of world manufactured exports, doubled. However, developing countries' efforts had been undermined by the reverse transfer of technology, which had aggravated shortages of some skills and created bottle-necks and dislocations in production activities. That phenomenon reflected the growing interdependence among countries in an increasingly integrated world economy. Multilateral discussions on the subject had focused on all its aspects, and the present Meeting continued the past work of UNCTAD in the area. The documentation prepared by the secretariat had taken into account the work done by previous expert group meetings and had benefited from comments by the Inter-Agency Group on Reverse Transfer of Technology and contributions by the International Labour Office, the United Nations Statistical Office and the Intergovernmental Committee on Migration. It examined further the causes and effects of the reverse transfer of technology in developing countries of origin and countries of destination, and it identified policy options available at different levels. The report of the Fourth Meeting of Governmental

Experts would be submitted to the Trade and Development Board at the second part of its thirty-fourth session and thereafter to the General Assembly at its forty-third session.

II. CURRENT SITUATION WITH RESPECT TO ALL ASPECTS OF THE INTERNATIONAL MIGRATION OF SKILLED PERSONNEL FROM DEVELOPING COUNTRIES, FOCUSING ON THE NATURE, SCALE AND EFFECT OF SUCH FLOWS, TAKING INTO ACCOUNT THE CONCERNS OF ALL PARTIES, WITH A VIEW TO PROPOSING TO THE CONFERENCE AND, AS APPROPRIATE, OTHER INTERNATIONAL ORGANIZATIONS, FURTHER WORK THAT MAY BE CARRIED OUT TO MITIGATE THE ADVERSE CONSEQUENCES OF THIS PHENOMENON, ESPECIALLY AS IT AFFECTS THE DEVELOPING COUNTRIES, ALSO TAKING INTO ACCOUNT, AS APPROPRIATE, THE WORK DONE THUS FAR BY GOVERNMENTAL EXPERT GROUPS, AND ANY OTHER RELEVANT MATERIAL

(Agenda item 3)

5. The Officer-in-Charge of the Technology Division, introducing the item, recalled that the reverse transfer of technology had been under consideration in multilateral forums since 1967 and under consideration by UNCTAD since the third session of the Conference in 1972. UNCTAD had produced several studies on the subject for the Intergovernmental Group of Experts on the Feasibility of Measuring Human Resource Flows, which met in 1982, as well as for the First, Second and Third Meetings of Governmental Experts on the Reverse Transfer of Technology, held in 1983, 1984 and 1985, respectively. Discussions in those meetings had focused on data collection and comparability, measurement and economic valuation of skill flows and the magnitude, causes and consequences of the reverse transfer of technology, including policies and measures to mitigate its adverse consequences. They had highlighted different countries' experiences in the area in question and had linked improved policy formulation and implementation with the collection and dissemination of quantitative and qualitative information and the establishment of a set of guidelines on reverse transfer of technology.

6. He then introduced the documentation prepared for the Fourth Meeting, namely "Trends and current situation in reverse transfer of technology" (TD/B/AC.35/16) and a bibliography of current literature in that field (TD/B/AC.35/17). Both documents had benefited from outside comment, including comments by the meeting of the Inter-Agency Group on Reverse Transfer of Technology, held at Geneva on 9 and 10 March 1987. That meeting had helped the attainment of a common approach by organizations of the United Nations system to the study of reverse transfer of technology.

7. The spokesman for the Group of 77 (Colombia), after praising the quality of the documents, said that the serious problems faced by the developing countries and the significant benefits accruing to the developed countries as a result of the reverse transfer of technology fully justified the attention paid to the problem by most of the international community since 1978. The reverse transfer of technology,

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constituting a net loss of human capital for the developing countries, was caused by acute international disequilibria in wealth and technology, as well as the selective practices pursued by developed countries to regulate the flow of skilled personnel in line with the changing requirements of their economies. The phenomenon posed major problems for the developing countries and seriously hindered the technological modernization efforts they were making at the cost of great sacrifices.

8. He welcomed the participation of countries from all regions and reiterated the importance attached by developing countries to common efforts to determine the nature, dimensions and effects of the phenomenon under discussion and to try to alleviate its serious effects on the developing countries. The participation of Group B countries was all the more important since those countries played a prominent role in the unfavourable international economic environment, which was the primary cause of the reverse transfer of technology.
9. Several factors combined to slow down the economic growth and technological progress of developing countries, thereby increasing the outflow of skilled personnel to developed countries. Such factors included decreasing export earnings due to protectionism and falling prices in developed countries, the restrictions and high costs attached to the transfer of technology from those countries, and excessive debt-servicing costs absorbing a large proportion of export receipts and thereby hampering economic development. Those factors made it difficult for developing countries to create the economic and technological environment necessary to retain their own skilled personnel.
10. Given such a situation, it was important, using multilateral negotiating forums, particularly UNCTAD, to arrive at appropriate and multilaterally agreed responses to the problems of the reverse transfer of technology at both the regional and global levels. Supportive action would also be needed from the various international organs and organizations that, together with UNCTAD, participated in the Inter-Agency Group on Reverse Transfer of Technology. That collective effort should take account of the impact of the diffusion of new technologies on the reverse transfer of technology and help mitigate the adverse effects of this complex phenomenon, which not only harmed the developing countries but also distorted international economic and commercial flows as a whole.
11. The expert from China said that the Fourth Meeting of Governmental Experts would build upon what had already been achieved at the previous three Meetings with a view to reducing the adverse effects of the reverse transfer of technology. The report before the Meeting (TD/B/AC.35/16) contained a comprehensive analysis, backed up by statistical data, concerning the general situation, characteristics and causes of the migration of skilled personnel from the developing countries. It also provided recommendations on ways of mitigating the adverse effects of the phenomenon. The brain drain from developing countries had grown worse as a result of the increasing gap between them and the developed countries. It led to serious setbacks in the social, economic and technical progress of developing countries. As a result the international community was called upon to adopt measures that would limit the negative consequences of the reverse transfer of technology, to which no country should remain indifferent.

12. The Government of his country, in pursuing its policy of reform and opening up to the outside world, paid particular attention to the brain-drain problem, and a series of policy-oriented and practical measures had been adopted in order to keep professionals at home. Among other things, steps were taken to encourage the return to their country of professionals who had graduated from educational establishments abroad. The necessary measures were carried out by competent governmental departments in a co-ordinated manner. Future policies and measures would aim at effectively reducing the present brain drain and bringing about the return of professionals upon completion of their studies abroad to participate in the modernization of their country.

13. A solution to the problem of reverse transfer of technology required positive and effective measures on the part of the world community as a whole. Developing countries had adopted appropriate policies and measures but they could not solve the problem alone. Developed countries that received immigrants with professional training, as well as the relevant international organizations, should join the developing countries in their efforts to study the problem and consider appropriate policies and measures. He regretted that only a few developed countries were present at the Meeting and expressed the hope that all countries would participate in the dialogue on this issue.

14. The expert from Canada said that a valiant effort had been made in preparing the report (TD/B/AC.35/16), which analysed problems relating to an extensive and complex field. Moreover, the bibliography (TD/B/AC.35/17) was the most comprehensive in its field. However, some comments were in order.

15. With regard to methodological problems, the paper had not defined the term "skilled migrants", and it was difficult to discuss an issue if the terminology was not properly defined. Secondly, the composition of migration from developing to developed countries had significantly changed. In the case of Canada, the vast majority of immigrants were no longer selected for their skills but for family reunification and humanitarian reasons. During the period 1982-1985, immediate family members of immigrants had constituted up to 77 per cent of the total inflow. In 1987, over 150,000 immigrants had come to Canada. Of those, only 5,000 (3.3 per cent) had been selected from developing countries. Thirdly, return migration should be taken into account in the analysis of the phenomenon. Many immigrants did return home, either in the first few years or later on. The 1971 Census of Canada had revealed that during the previous 10 years 21.9 per cent of immigrants had returned to their country of origin, and in the 1986 Census, the return migration rate had been found to be higher for some of the developing countries. During the period 1981 to 1985, the return migration rate for Viet Nam had been 11.5 per cent, for India 31.5 per cent, for Africa 24.1 per cent and for the Caribbean 31.6 per cent, while the overall rate had been 14 per cent.

16. Finally, the secretariat study introduced the theory of human capital using the historical cost approach and the replacement cost approach. However, in determining a capital value for migrants, only the supply side had been taken into account, whereas price was also determined by demand.

17. Another problem was that the study lacked objectivity. In paragraphs 26 and 27, it was observed that the outflow of skilled personnel from developing countries to the United States and Canada had declined, which could imply that the problem of reverse transfer of technology was less an issue today than it had been in the past.
18. One of the principal weaknesses of the report was that social and cultural factors had not been taken into account. Socially, immigration of skilled personnel from developing countries to developed countries had helped to obtain attitudes and behaviour patterns that were very favourable to development. Culturally, such migration had a tremendous beneficial effect on developing countries, as reflected in a better understanding of those countries in the developed countries, and that in turn contributed to fostering good relations between developed and developing countries and promoting developmental education and aid. Similarly, immigrants played a crucial role in increasing imports from developing countries.
19. A further problem with the report was its assumption that all developing countries were at the same stage of development, which was far from true. Some developing countries had a huge surplus of skilled personnel, and the skilled person who migrated could help the sending country by making remittances and relieving unemployment.
20. Finally migration did not consist entirely of moves from South to North but also from North to North, from South to South and even from North to South. The emerging trend was towards interdependence between nations, as reflected in free or freer movement of goods and services.
21. The spokesman for the Group of 77 (Colombia) said that Canada had been chosen as an example in the study because of the relative reliability of its national statistics on skilled migration in the context of a general scarcity of statistics and the difficulties resulting from the use of different methodologies for data collection in various countries. The pioneering study prepared by the secretariat (TD/B/AC.35/16) inevitably contained some inaccuracies, but it corresponded in its scope to positions already accepted at previous meetings on the reverse transfer of technology.
22. Canada had distinguished itself by its openness to receiving refugees, and the representative of Canada had said that the number selected on the basis of skills was limited. However, UNCTAD dealt with so-called economic refugees, and it would be interesting to know what criteria were used for that category. Another problem was that many economic migrants did not receive adequate recognition of their expertise in the receiving developed countries, which meant that many of the potential positive effects for the country of origin were lost. Moreover, in the experience of many developing countries, the value of remittances from migrant professionals represented a very small proportion of gross domestic product.
23. The expert from Lebanon said that he agreed entirely with the comments made by the spokesman for the Group of 77. In his country, the very high number of emigrants (6 to 10 million) contrasted sharply with the 3 million people living

within the country. The effects of that phenomenon on the domestic economy were significant, undermining the solid foundation required for genuine development. Referring to the comments made by the representative of Canada, he agreed that humanitarian aspects were relevant but considered their effects limited in time and without long-term repercussions. What was needed to solve the basic problem was open-mindedness and a spirit of co-operation in order to produce mutually beneficial results for both developed and developing countries.

24. The spokesman for the Group of 77 (Colombia), responding further to the comments on the report (TD/B/AC.35/16) made by the expert from Canada, pointed out first that the competence of UNCTAD in dealing with reverse transfer of technology was limited to the economic consequences of that phenomenon and did not include its social, political, cultural and spiritual dimensions, which could not be considered at the present Meeting. The problem was how to measure the net economic losses of developing countries and to mitigate the negative economic effects of the phenomenon. In this respect the problem of the definition of reverse transfer of technology should be resolved by the governmental experts.

25. The discussions at the Meeting should also be limited to the South-North flow of skilled personnel. South-South skill migration accounted for a very small percentage of movements and was furthermore regarded as an aspect of economic co-operation among developing countries, which was considered in other forums on the basis of other methods and doctrine. The main problems associated with the reverse transfer of technology lay in its South-North dimensions, and the main purpose of the Meeting was to mitigate the impoverishment of developing countries caused by the reverse transfer of technology.

26. The expert from Yugoslavia, commenting on the report (TD/B/AC.35/16), said that it had been estimated in international forums that, in the labour market in developed countries, there would continue to be significant demand for skilled labour from developing countries until the end of the century. The reverse transfer of technology was currently taking place in conditions very different from the 1960s or 1970s, when migration had involved mainly non-skilled migrants. In the 1980s, developing countries, unlike developed countries, had been unable to achieve satisfactory economic growth and simultaneously implement necessary structural and technological changes. That, as well as inadequate planning relating to training, had been the main reason for the reverse transfer of technology. Other factors had been the demand for certain skills in developing countries because of technological and structural changes, the failure by those countries' educational systems to meet that demand, and their immigration policies favouring the admission of skilled migrants. Such factors as inadequate working or living conditions in home countries had only come into play in that specific context and would not in themselves have caused the reverse transfer of technology.

27. The majority of developing countries had created conditions to induce the return of skilled migrants. Yugoslavia had adopted such policies in the second half of the 1970s but their success had depended on developments in the host countries. In 1986, the number of Yugoslavs working abroad had increased, while the number returning had decreased. Of those who had returned, the occupational and age structure was unfavourable. In the 1980s, Yugoslavia had been faced with

the emigration of highly skilled personnel. That drain could seriously hamper the implementation of the strategy for technological development of Yugoslavia to the year 2000 and its overall development strategy. Yugoslavia had therefore implemented measures to encourage skilled personnel to stay, but it needed the assistance of receiving countries. Yugoslavia had also experienced an outflow of personnel qualified in the arts and humanities. Such an outflow decreased the potential for social and cultural development in developing countries. Finally in that connection, consideration should be given to the question of the drain of personnel employed by subsidiaries of transnational corporations in developing countries to the parent companies.

28. From experience and analysis of intra-European labour migration in the 1960s and 1970s, it was obvious that the neo-classical model of the equilibrated costs and benefits of migration did not work. The problem of unemployment usually persisted in sending countries. Accordingly, that model could not be applied in the future analysis of skilled migration between South and North. In order to achieve a higher level of analysis, it would be indispensable to approve a data base and statistics of universal significance to follow up migration flows in the world.

29. The expert from the German Democratic Republic said that the report (TD/B/AC.35/16) was valuable and well balanced, reflected the work done so far by the governmental experts, and should be a good basis for further work. It revealed the real dimension of the problem of reverse transfer of technology and demonstrated the existence of an uncompensated flow of skilled personnel from developing countries to developed market-economy countries. The document also brought out the lack of knowledge of the regulatory and restrictive policies of both the countries concerned and enterprises. He agreed that there remained issues that must be given further consideration, as enumerated in chapter VII of the report, and the experts should continue to examine them.

30. He noted that the report did not contain an examination of the role of the social and political environment (such as the role of transnational corporations, market forces and the existence of economic resources) in the context of the reverse transfer of technology. It also did not sufficiently indicate what action could be taken by the Meeting. The Meeting should therefore try to identify options and proposals for future work, avoiding concentrating on divergences of view among countries.

31. The expert from Sweden said he agreed with the findings of the UNCTAD secretariat's studies as to the lack of sufficient data, standards and definitions on the reverse transfer of technology. In his opinion, it was difficult to discuss reverse transfer of technology without any definition of what constituted a skilled migrant; moreover the concept of reverse transfer of technology was too narrow.

32. Over half of the new migrants to Sweden were from developing countries, though only about 16 per cent of the total immigrant population was from non-European countries. Of the students who came to study in Sweden, only a few stayed on because of family or asylum considerations. Employment permits for migrants were very few in number, and the number of migrants from developing countries in that

category was insignificant. Those granted permits had family links, needed asylum or had similar reasons. However, irregular migration of refugees and asylum seekers also took place, with people who did not need asylum trying to take advantage of the genuine concern for refugees. Such people included skilled persons. Sweden's immigration policy was based on the goals of equality, freedom of choice and partnership; efforts were made to integrate immigrants into the community, while respecting their wishes in that respect. The costs incurred in implementing that process of integration were high, and there were no overall economic reasons of importance behind the acceptance of some skilled migrants from developing countries.

33. It was up to individual migrants to decide whether they wanted to stay, and the Swedish Government did not want to give the impression that it wished them to leave. It was for the country of origin to attempt to induce their voluntary return. The Swedish Government had provided assistance to refugees who wished to return voluntarily but who lacked the means to do so, and it also supported the work of voluntary organizations in that field. About half of the immigrants to Sweden in the 1970s had returned or would return to their country of origin: that figure was likely to be slightly lower for the migrants of the 1980s. Co-operation existed between Sweden and countries of origin to make return possible, especially with Finland, and included information services relating to the labour market and paid visits for applicants for employment. Co-operation also existed with Yugoslavia. The bilateral approach was therefore a fruitful means of dealing with problems associated with reverse transfer of technology. Finally, it should not be overlooked that skilled migrants were important in meeting the social needs of migrant communities at large, in improving the understanding between those communities and the majority population, and in developing co-operation between countries of residence and countries of origin. That also had positive implications - economic as well as others - for the countries of origin. The concern of the sending countries for their communities abroad should also be kept in mind in that context to avoid contradictory action.

34. The expert from Nepal said that the reverse transfer of technology was a feature of modern world economic relations and represented an international transfer of productive resources, distinct from the "pure labour" component of the factors of production. It was not to be regarded as merely a consequence or confirmation of the weakness and poverty of sending countries, but as a transfer of technology in recognition of mutual interests. It had serious socio-economic consequences for both sending and receiving countries, and manifested the growing interdependence among countries.

35. The reverse transfer of technology was an international exchange of skills similar to exchanges of other factors of production in a buyer's market, and it involved a transfer of productive resources embodied in the migrant, in whose education the country of origin had invested. Countries of immigration would not admit migrants if it was not in their interests to do so, and their immigration regulations served their interests by emphasizing skills as a condition of entry. Receiving countries gained considerably from the reverse transfer of technology, while the loss to the sending countries far outweighed the gains accruing from lesser unemployment, migrants' remittances or the return of migrants with improved

productive capacity. There was therefore justification for claims for redressing the loss incurred by the countries of origin and mitigating the adverse consequences for their development. International equity required net gains to be shared on a mutually beneficial basis, which might be done by institutionalizing a redistributive mechanism within a framework of international co-operation and still exchange. It was ironical that so many skilled people left their countries at a time when those countries were trying to develop, and it must be recognized that such migration worked against the development efforts of the international community. The problem was thus a development issue, and its solution required concerted international co-operation, to share burdens and benefits, in addition to national efforts. The recommendations made in studies by the UNCTAD secretariat and other international agencies were valuable in that respect.

36. The expert from Romania said the fact that the reverse transfer of technology had been the subject of multilateral attention for so long demonstrated that it was a continuing problem in international relations. The present Meeting had a clear mandate from the General Assembly to study the reverse transfer of technology and to recommend proposals to mitigate its adverse effects, and it should continue to consider the phenomenon in the North-South context. General Assembly resolution 40/191 had been adopted almost unanimously after difficult negotiations in which the Group of 77 had taken a constructive approach. However, some developed countries that had supported the resolution had not sent their experts to the Meeting, and that showed a lack of political will on the part of those countries to contribute to stopping the reverse transfer of technology because of the benefits they obtained from it.

37. The reverse transfer of technology greatly aggravated the economic problems of developing countries at a time when those problems were particularly bad. It constituted a substantial loss to developing countries of their human, economic, scientific and technological resources. The reverse transfer of technology thereby strongly retarded the development of developing countries, thus enlarging the gap between them and the developed countries.

38. There existed sufficient data to demonstrate the negative effects of the reverse transfer of technology, and the Meeting should therefore aim at recommending effective bilateral and multilateral measures to mitigate those effects. Such recommendations could include (a) increasing co-operation between developing and developed countries to stop the outflow of skilled personnel from the former to the latter and to encourage their return, (b) support, including financial and technical assistance, for the efforts of developing countries, particularly those worst affected, in the training of their personnel, (c) support for the implementation in developing countries of programmes and projects to ensure the use of their trained personnel and (d) the extension of the practice of concluding bilateral agreements on conditions for temporary employment, on the transfer of salaries of skilled emigrants to countries of origin, and on other forms of compensation for the expenses incurred by the home countries in training skilled emigrants.

39. The scale, nature and consequences of the reverse transfer of technology were such that the problem must remain on the agenda of the international community. UNCTAD should continue to be the focal point, and should extend co-operation on the subject with other institutions and international organizations. The Inter-Agency Group on Reverse Transfer of Technology, which had proved its efficiency, should continue to meet regularly and to play a catalytic role in co-ordinating work done by different competent organizations and in exchanging information, thus reinforcing the efficiency and role of the United Nations system in the area in question.

40. The representative of the United Nations Development Programme (UNDP) said that his organization attached great importance to the issue of reverse transfer of technology and, within the limits of its mandate, would do its utmost to assist in the joint efforts of all interested parties. Through the funding of development projects, UNDP assisted developing countries in creating local conditions that induced skilled personnel to remain in their countries, or that encouraged them to return to their home countries, as was the case with the TOKTEN programme (Transfer of Knowledge Through Expatriate Nationals). The programme was at that moment in operation in 25 countries, and 12 more countries had expressed the desire to join it. Up to December 1987, over 1,700 expatriate consultants had visited TOKTEN countries at a cost of around \$US 10 million in UNDP/IPF funds. TOKTEN international workshops had been held in Turkey in 1978, in Pakistan in 1982, in Egypt in 1985 and in India in February 1988. The last workshop had stressed, among other things, the greater use of TOKTEN consultancies in the private sector, the involvement of more women experts in the programme, and the need to encourage expatriates to set up small and medium-sized high-technology units in the country.

41. At the governmental level, the TOKTEN mechanism had taken firm root. The Governments of Egypt and India had mobilized large additional resources for their programmes. In China, which had the largest of the ongoing TOKTEN programmes, the Government had allocated \$US 1.5 million under its present country programme. Also of importance were the Senior Technical Adviser Recruitment (STAR) and Short-term Advisory Services (STAS) programmes, under which successful businessmen shared their experiences with their counterparts in their countries of origin. That approach to the problem of the outflow of talent from developing countries must, however, be viewed as complementary to macro-economic policies which created a favourable environment for growth and generated employment opportunities.

42. The expert from Egypt said that the importance and complexity of the issues before the experts required full understanding and co-operation among developed and developing countries. He welcomed the presence of some Group B countries at the Meeting and he hoped that more Group B countries would become involved in the work of the experts in order to arrive at a consensus on the nature of the problem under discussion and on how to reduce its adverse consequences for the social and economic development of the developing countries and, consequently, the whole world.

43. The developing countries suffered from the outflow of skilled manpower, which constituted one of the main problems in implementing their development programmes. The migration of skilled Egyptian labour to Arab, African and other developing countries was an integral part of economic co-operation among developing

countries. Within that context, Egypt had established a Technical Assistance Fund for Africa, which provided African countries, particularly the least developed among them with Egyptian experts, as well as with training opportunities in Egyptian institutions. With regard to the outflow of skilled labour to developed countries, Egypt implemented incentive policies to encourage skilled personnel to remain in Egypt or to return from abroad, created links with skilled labour abroad through the Ministry for Egyptians Abroad, and participated actively in the UNDP-sponsored programme for the utilization of knowledge and experience of Egyptian expatriates in developed countries (the TOKTEN scheme). However, no solution to the adverse consequences of reverse transfer of technology could be achieved at the national level alone. Such a solution required a global effort. With regard to the three proposals from three leaders of developing countries (TD/B/AC.35/16, paras. 87 to 90), one of those proposals had been made by President Mubarak of Egypt in the International Labour Organisation in 1983, calling for the establishment of an international fund for vocational training. All three proposals deserved serious study. Paragraphs 7 and 68 of document TD/B/AC.35/16 also indicated a problem requiring further study, namely the low rate of remittances of skilled labour to their developing home countries. It was important to acknowledge the necessity of adjusting educational processes to the needs and peculiarities of developing countries, as well as the urgency of dissemination and exchange of information concerning policies and experiences of developing countries exporting skilled labour. He expressed the hope that the Meeting would adopt a set of measures as a starting point in addressing the adverse consequences of the reverse transfer of technology for developing countries, with the aim of overcoming scarcity of data and enhancing co-ordination among international bodies on reverse transfer of technology.

44. The expert from Canada, responding to the comments of the spokesman for the Group of 77 to the effect that the Meeting was only dealing with the economic aspects of reverse transfer of technology, pointed out that the agenda made reference to "all aspects of the international migration of skilled personnel". The attempt to limit the discussion to economic aspects of reverse transfer of technology was therefore not in accordance with the agenda before the Meeting. He provided information on some of the questions raised by the spokesman for the Group of 77 relating to regulations on immigration to Canada, which were based on the Canadian Government's belief that there should be no discrimination on the basis of race, ethnic origin or country of birth, and that equality of opportunity should be provided to everyone. However, the proportion of skilled migrants from developing countries had declined very significantly in Canada. In 1987 three out of every four skilled immigrants arriving in Canada were not from developing countries. In Canada, there was no scarcity of skilled personnel, and immigration was limited because of that and because of a relatively high unemployment rate. The composition of immigrants to Canada had changed drastically and included mostly refugees and family unification classes. He said that the problems for the Meeting were threefold: the definition of skilled migration, the non-availability of acceptable and reliable data (for example, nobody knew how many migrants were returning to their countries of origin) and a discussion of all aspects of migration, not only economic ones.

45. The spokesman for Group D (German Democratic Republic) said he welcomed the resumption of the work of the Meeting, as well as the renewed participation in that work of an increasing number of Group B countries. In his view, that renewed participation was a sign of the growing awareness within the international community of the need to tackle without further delay the problems oppressing mankind.

46. Group D countries also believed that in order to mitigate the adverse effects of the reverse transfer of technology, it was of paramount importance to create a certain positive social and economic environment in the developing countries and to introduce in receiving developed countries policies that recognized the fundamental rights of the economically weak nations.

47. The development experience of the countries of his Group proved the importance of highly qualified manpower in economic and social progress. A lack of skilled personnel hampered development and might even lead to stagnation, particularly at a time of rapid structural changes in the world economy such as the present. The socialist countries had given developing countries extensive assistance in the training of highly qualified manpower, in part by providing graduate and post-graduate education, particularly on subjects which were vital to developing countries and oriented to their national requirements. Such an approach facilitated the smooth reintegration of graduates into their societies and prevented any flow of highly skilled cadres from developing countries to socialist countries.

48. The Meetings of Governmental Experts had so far produced valuable results, and the documentation for the present meeting provided a solid starting point for further work, which should be action-oriented. Group D considered that, in the longer run, an integrated programme of action which reflected the views and interests of all countries concerned could be a desirable outcome of that work.

49. The expert from Lebanon said that a distinction must be made between South-South and South-North emigration. While the former was time-bound and for specific purposes, the latter was for an indefinite period, usually of more than 10 years. Emigration to the developed countries posed a serious problem for the developing countries, which suffered from shortages of basic services stemming in part from the social and cultural conditions prevailing therein. Those shortages constituted obstacles to the further development of citizens, thereby forcing them to migrate. The movement abroad of such manpower was triggered by the need to develop further their skills, with the intention of returning back home. Their return, however, had not always materialized, as they became established in the developed countries and tended to lose contact with their home countries. Historically, that feature was not new, but dated back several decades, when a number of developing countries had contributed to the development of industrialized countries. He concluded by stressing the need for co-operation among all concerned in order to reach durable, mature and stable solutions to the problem, as well as for the provision of appropriate assistance that would enable the developing countries to develop their economies and absorb their own skilled personnel.

50. The spokesman for the Group of 77 (Colombia), responding to the expert from Canada, said that the percentage of skilled personnel returning to their countries of origin was not the same as that of skilled personnel leaving recipient countries, because many went on to other developed countries.

51. The expert from France, referring to the interest of his country in finding practical solutions to the problems arising from reverse transfer of technology, said that the Meeting offered an opportunity for a new departure for an unbiased examination of the brain-drain phenomenon. Referring to General Assembly resolution 40/191, he said that the question of skill outflow from developing countries should be examined in its global perspective, covering skill outflow from South to South and from South to North.

52. Commending the efforts made by the secretariat in the preparation of the documents (TD/B/AC.35/16 and TD/B/AC.35/17), he said that great improvements had been made in the analysis of the phenomenon. Paragraph 24 of document TD/B/AC.35/16 in particular demonstrated that there were not many countries in the world that had complete and up-to-date migration statistics. It was therefore necessary that competent organizations should collect and systematize information on the subject. The analysis of the causes of the reverse transfer of technology raised the question of human resource planning. Such planning was particularly needed in the present period of economic restructuring. Unfortunately, it had not until now received adequate attention from developing or developed countries, or from international organizations.

53. He considered that the statement made in paragraph 79 of document TD/B/AC.35/16 was not scientifically based. However, the points raised in paragraph 82 were central to all debates on the question of the outflow of skilled personnel from the developing countries; it was necessary to know how to mitigate the negative effects of reverse transfer of technology by influencing its causes and by reducing its magnitude. He appreciated the fact that there was no mention of compensation in the document. The fact that the difficulties of valuation were recognized was also an improvement. It was arbitrary to impute a monetary value to the skills and productive potential of an individual human being, and neither the historical cost approach nor the discount value approach were able to provide solutions for the purposes of the deliberations of the present Meeting. A new approach could be envisaged, based on the concept of net annual flows of added value provided by skilled migrants. Some further work in that respect could be done in academic institutions.

54. The representative of the International Labour Organisation (ILO) said that ILO was committed to continued collaboration with the Inter-Agency Group on Reverse Transfer of Technology, the first meeting of which had undertaken substantive discussions on the definition of the main concepts involved in the reverse transfer of technology. Regarding relevant activities of ILO, work had recently been carried out to review the International Standard Classification of Occupations, with the latest meeting of labour statisticians having been held in November 1987. In that same month, the High-Level Group of Experts on Restructuring and Adjustment had also met to discuss the employment and social effects of adjustment policies implemented in several countries, particularly those promoted by multilateral

finance agencies. The reports of both meetings would be transmitted to the UNCTAD secretariat. The ILO medium-term plan up to 1995 included a proposal to set up a system to monitor social and employment indicators. In relation to the discussions of the Meeting as to what constituted skill, it should be emphasized that skill encompassed both academic level and work experience. The conclusions of the aforementioned meetings could provide possible inputs in the definition of criteria relevant to the present discussions. ILO was willing to participate in any future work that might be undertaken to implement the Meeting's recommendations.

55. The expert from Tunisia, referring to the statement by the expert from France, expressed reservations concerning the contention that the skills acquired by a migrant in a receiving country could be of benefit to his country of origin on his return, since such skills were acquired in a different technological environment. Many third world countries, including Tunisia, had adopted measures to encourage their skilled personnel to stay at home or their skilled emigrants to return. However, the success of such measures had been limited because of both the economic and the cultural dimensions of the problem.

56. The Officer-in-Charge of the Technology Division, responding to comments made by delegations, said that the views expressed would help to improve the conceptual and empirical work of the secretariat. The report before the Meeting aimed at serving the discussion and providing a general overview of the brain-drain phenomenon. Owing to lack of space, a detailed discussion of certain aspects such as the cultural, social and political causes and impacts of skilled migration could not be undertaken. Further research was therefore needed to obtain a comprehensive picture of those aspects in both countries of emigration and immigration, as well as on the international economic, social and political environment underlying the brain drain.

57. The documentation of the secretariat, like any other work on the subject, naturally suffered from the lack of published data and of agreed sets of standards and definitions. In order to respond to the requirements of General Assembly resolution 40/191, the secretariat had limited the geographical scope of the study by focusing on Canada and the United States, countries that had the most up-to-date and complete statistics. There was also a need for internationally agreed sets of principles and guidelines on reverse transfer of technology, including a definition of the term "skilled migrant". In spite of the efforts made in that direction in the secretariat documentation submitted to the Third Meeting of Governmental Experts on the Reverse Transfer of Technology (TD/B/AC.35/12), the problem presented a challenge for further discussions on the subject and for the collection of uniform and comparable statistics. The secretariat was also faced with a shortage of relevant data for measuring the flows of skilled migration, particularly return migration of skilled personnel from countries of immigration to developing countries of origin.

58. As regards the approaches mentioned in the study concerning the valuation of the capital value of skilled migrants, the secretariat had emphasized that both the historical approach and the present discounted value method were beset with major problems which were referred to in paragraphs 38 to 41 of the report. While agreeing that further work needed to be done to improve on those and other

approaches suggested in the literature, such work should probably be carried out by academic institutions. Finally, the interesting and constructive contributions of international organizations to the Meeting were indicative of the fruitful co-operation characterizing inter-agency work in that complex and multifaceted area.

59. At the 5th plenary meeting, on 16 March, the Chairman presented "Draft conclusions and recommendations" (TD/B/AC.35/CRP.6).

60. At the 6th (closing) plenary meeting, on 18 March, the Chairman introduced "Draft agreed conclusions and recommendations submitted by the Chairman" (TD/B/AC.35/L.8). That text superseded the text contained in document TD/B/AC.35/CRP.6.

#### Action by the Fourth Meeting of Governmental Experts

61. At its 6th (closing) plenary meeting, the Fourth Meeting of Governmental Experts adopted the "Draft agreed conclusions and recommendations submitted by the Chairman" (TD/B/AC.35/L.8) (see appendix).

#### Closing statements

62. The spokesman for the Group of 77 (Colombia) said that the Group of 77 greeted the agreed conclusions and recommendations just adopted with the same optimism they had felt as a result of the constructive spirit displayed at the seventh session of UNCTAD. Those recommendations and conclusions did not, of course, represent the end of the experts' work. They reaffirmed that the reverse transfer of technology represented a transfer of productive resources from sending to receiving countries, and they gave the international community as a whole time to put its ideas in order and work towards appropriate decisions. The conclusions and recommendations were based on the work carried out by the experts over the previous 10 years, but they did represent a starting point in the sense that they proposed new institutional procedures - future work on reverse transfer of technology would be dealt with by the Committee on Transfer of Technology. That would allow a politically more complete approach to the problem, which in turn would require a political vision, but the future work of the Committee on Transfer of Technology should nevertheless continue to be based on the technical foundations provided by the past and present work of the experts, the future findings of the Committee itself and elements provided by individual countries. It was to be hoped that experts would continue to play an active role in the Committee's discussions.

63. The Group of 77 was satisfied with the consensus reached, which showed that countries and groups in UNCTAD could agree on problems of world trade. It was to be hoped that the countries that benefited from the reverse transfer of technology were aware of the patience being shown by the developing countries and the concomitant sacrifices of their peoples. The developed countries should also be aware that combating the reverse transfer of technology was in their interests as well, since they needed technologically developed clients in the South and one of the factors most affecting the technological development of developing countries was the reverse transfer of technology.

64. The countries benefiting from the reverse transfer of technology, acting individually, bilaterally and multilaterally, should move quickly to take effective measures to deal with the causes and negative effects of that transfer. That would require greater political will and also sustained attention within the Committee on Transfer of Technology. The experts had also reaffirmed the need for interdisciplinary and inter-agency action, and it was to be hoped that co-ordination between UNCTAD and other competent international bodies would continue. The developed countries, for their part, must provide effective support for the efforts of the developing countries and participate more actively in promoting exchanges of trained manpower among developing countries.

65. The spokesman for Group D (German Democratic Republic) said that this Group regarded the brain drain as a phenomenon occurring within the system of economic relations between developing and market-economy countries. The brain drain caused sustained damage to many developing countries and depressed the living standards of millions.

66. The Fourth Meeting had demonstrated the significance of the brain drain issue for improving and restructuring international economic relations and had borne out the fact that all countries involved must implement policies designed to obviate its adverse effects. The Meeting had produced a positive result, in that some compromise had been achieved among all groups of countries, but there were two essential shortcomings: no further headway had been made in the work on the concept of skilled labour, in contributing to a better understanding of the causes and consequences of the brain drain or in providing instruments and a methodology for work on that topic; moreover, it had not been possible to establish concrete terms of reference for future work on the brain drain issue. The socialist countries wanted future work to be more action-oriented, and they felt that that work should be carried out within the existing mandate and institutional framework.

67. The expert from China said that the exchange of views at the Fourth Meeting had been very useful, and the comprehensive and balanced conclusions and recommendations reflected a spirit of co-operation, which augured well for future work.

68. The brain drain was a matter of serious concern to the international community, and the useful dialogue that had occurred would help promote mutual understanding and contribute towards solving the problem. It was important that countries receiving large numbers of professional personnel should participate in that dialogue.

69. Most immigrants had different motives for leaving their country, but the differences in economic level that existed between countries and the lack of adequate research facilities in the developing countries were undoubtedly factors that came into play. The developed countries therefore had a significant advantage in attracting professionals, which resulted in serious economic losses to the developing countries. There would be no fundamental change in the situation for a long time to come, and in fact the problem would no doubt become more serious. It was therefore essential to avoid mutual accusation and to identify effective measures to mitigate the brain drain's adverse consequences on developing countries.

70. The expert from France said that the exchange of views at the Fourth Meeting had been rich and open, and the agreed conclusions and recommendations resulting therefrom were satisfactory and balanced. The importance of the problem of the reverse transfer of technology had been generally recognized, and the new direction established for future work would allow researchers to go into the question further in the best possible framework.

71. The expert from Canada said that the ready co-operation displayed at the Fourth Meeting had produced positive results and had extended knowledge on the question of the reverse transfer of technology, thereby allowing future discussions on the question to take place on a better basis.

72. The Chairman said that the outcome of the Meeting was the result of the joint efforts of able experts displaying deep insight. The co-operation displayed at the Meeting had been decisive in achieving results and had demonstrated the role that organizations like UNCTAD had to play in reshaping a troubled world.

73. The Deputy Secretary-General of UNCTAD said that the Fourth Meeting had succeeded in adopting conclusions and recommendations which would make it possible to pursue the efforts already begun, and the UNCTAD secretariat could be counted upon to provide support for those efforts. The fact that the dialogue which had taken place was universal was particularly welcome.

### III. ORGANIZATIONAL MATTERS

#### A. Opening of the Fourth Meeting of Governmental Experts

74. The Fourth Meeting of Governmental Experts on the Reverse Transfer of Technology was opened on Monday, 14 March 1988, by the Deputy Secretary-General of UNCTAD acting on behalf of the Secretary-General of UNCTAD. The Deputy Secretary-General made an introductory statement (see para. 4 above).

#### B. Election of officers

(Agenda item 1)

75. At its 1st plenary meeting, on 14 March, the Fourth Meeting of Governmental Experts elected Mrs. S. Meznaric (Yugoslavia) as Chairman and Mr. A. Jouravlev (Union of Soviet Socialist Republics) as Vice-Chairman-cum-Rapporteur.

#### C. Adoption of the agenda and organization of work

(Agenda item 2)

76. At the same meeting, the Fourth Meeting of Governmental Experts adopted its provisional agenda (TD/B/AC.35/15/Rev.1), as follows:

1. Election of officers
2. Adoption of the agenda and organization of work
3. Current situation with respect to all aspects of the international migration of skilled personnel from developing countries, focusing on the nature, scale and effect of such flows, taking into account the concerns of all parties, with a view to proposing to the Conference and, as appropriate, other international organizations, further work that may be carried out to mitigate the adverse consequences of this phenomenon, especially as it affects the developing countries, also taking into account, as appropriate, the work done thus far by governmental expert groups, and any other relevant material
4. Adoption of the report of the Meeting.

D. Attendance a/

77. The following States members of UNCTAD were represented at the Meeting: Afghanistan; Algeria; Argentina; Austria; Bangladesh; Bhutan; Bolivia; Bulgaria; Canada; Chile; China; Colombia; Cuba; Czechoslovakia; Deomcratic Yemen; Denmark; Ecuador; Egypt; Finland; France; German Democratic Republic; Ghana; Greece; Hungary; India; Indonesia; Ireland; Italy; Jordan; Lebanon; Madagascar; Mexico; Morocco; Nepal; Netherlands; Nigeria; Norway; Pakistan; Philippines; Poland; Republic of Korea; Romania; Saudi Arabia; Senegal; Sri Lanka; Sweden; Thailand; Trinidad and Tobago; Tunisia; Turkey; Union of Soviet Socialist Republics; United Republic of Tanzania; Viet Nam; Yemen; Yugoslavia; and Zaire.
78. The United Nations Development Programme was represented at the meeting.
79. The following specialized agencies were represented at the meeting: International Labour Organisation; World Health Organization; International Telecommunications Union; and United Nations Industrial Development Organization.
80. The following intergovernmental organizations were represented at the meeting: European Economic Community; Intergovernmental Committee for Migration; League of Arab States; and Permanent Secretariat of the General Treaty on Central American Economic Integration.
81. The following non-governmental organizations were represented at the meeting: General Category: International Foundation for Development Alternatives; and Women's International League for Peace and Freedom.

E. Adoption of the report of the Meeting

(Agenda item 4)

82. At its 6th (closing) plenary meeting, on 18 March, the Fourth Meeting of Governmental Experts adopted its draft report (TD/B/AC.35/L.7 and Add.1 and 2) with some amendments and authorized the Vice-Chairman-cum-Rapporteur to complete the report as appropriate.

Notes

a/ For the list of participants, see document TD/B/AC.35/INF/4.

## APPENDIX

Agreed conclusions and recommendations

In accordance with General Assembly resolution 40/191 of 17 December 1985, and under the terms of reference defined therein, the Fourth Meeting of Governmental Experts on the Reverse Transfer of Technology was held at Geneva from 14 to 18 March 1988. It gave further consideration to the reverse transfer of technology, and examined the following studies submitted by the UNCTAD secretariat: "Trends and current situation in reverse transfer of technology" (TD/B/AC.35/16) and "A bibliography on the reverse transfer of technology" (TD/B/AC.35/17).

The Meeting of Governmental Experts,

Recalling General Assembly resolutions 40/191 of 17 December 1985, 3201 (S-VI) and 3202 (S-VI) of 1 May 1974, 3281 (XXIX) of 12 December 1974, 3362 (S-VII) of 16 September 1975, and 35/56 of 5 December 1980,

Taking note of the reports of previous UNCTAD meetings on reverse transfer of technology, in particular the Intergovernmental Group of Experts on the Feasibility of Measuring Human Resource Flows, and the First, Second and Third Meetings of Governmental Experts on Reverse Transfer of Technology,

Taking note also of the work done by the Inter-Agency Group on Reverse Transfer of Technology,

1. Concludes that:

(a) The reverse transfer of technology constitutes a transfer of productive resources from the developing country of emigration to the country of immigration, while the significance of such transfers may vary in accordance with the qualifications of the skilled migrants and the skill requirements of both groups of countries;

(b) The problem of reverse transfer of technology is a multifaceted one encompassing social, economic and development issues, as well as political, civil and human aspects, and has implications of global concern;

(c) Skill formation and its efficient utilization is a critical component of the social, economic and technological transformation of developing countries;

(d) As the continuing outflow of skilled personnel from developing countries seriously hampers their development, there is a need for appropriate policies to avoid the brain drain and to obviate its adverse effects;

(e) In order to mitigate the adverse effects of the reverse transfer of technology, policies and concrete measures have been adopted by many developing countries at the national and regional levels and through bilateral and multilateral programmes;

(f) The work accomplished by the Meetings of Governmental Experts on Reverse Transfer of Technology has shown the close link between improvement of policy formulation and implementation at all levels and collection and dissemination of quantitative and qualitative information, on the one hand, and the establishment of a set of technical definitions and guidelines on reverse transfer of technology, on the other;

(g) It is necessary to improve the quantity, quality and coverage of information on international migration of skilled personnel from developing countries. Additional data requirements should concern both outflows and return flows of such personnel and of migrant population, including their educational and occupational characteristics;

(h) There is a need for countries of origin and destination individually and collectively to undertake a periodic monitoring of these outflows and inflows in order to keep under review their magnitude, composition and impacts in relation to domestic skill requirements, as well as some of their changing causes and determinants;

(i) Systematic collection and dissemination of information and analyses on policies and experiences of individual countries in this area should be encouraged at the subregional, regional and international levels, particularly as regards the incentive measures adopted in developing countries to retain their skilled personnel at home and encourage the return of those working abroad;

(j) As a comprehensive solution to the problem of reverse transfer of technology requires the concerted action of all parties involved, the developed countries concerned should consider favourably the adoption of policies that encourage greater participation by developing country emigrants in the development effort of their home countries. Developed countries, especially those receiving skilled migrants, should also as appropriate take fully into account in their aid and technical assistance programmes the need to strengthen developing country institutions so that skilled personnel can be encouraged to stay in their own countries;

(k) In work on skilled migration, special attention should be given to the promotion of joint research in both emigration and immigration countries and at a bilateral and multilateral level;

(l) Further research is also needed to examine the effect of new technology on skill requirements and its implications for the reverse transfer of technology;

(m) The work done by the Inter-Agency Group on Reverse Transfer of Technology is of major significance for a comprehensive and complementary response from the United Nations system and other interested organizations to the initiatives that Governments may take concerning the various aspects of the reverse transfer of technology;

2. Recommends that:

(a) In view of the usefulness of the documentation submitted by the UNCTAD secretariat to this Meeting, the Secretary-General of UNCTAD should circulate widely the above-mentioned documents together with the present report to all States members of UNCTAD and relevant organs, organizations and bodies of the United Nations system as well as to other relevant intergovernmental and non-governmental organizations for examination and comments as appropriate;

(b) The Secretary-General of UNCTAD should make the necessary arrangements so that future work on reverse transfer of technology be considered by the Committee on Transfer of Technology in the context of the elaboration of its work programme, taking into account the conclusions and recommendations of the present Meeting and of the work accomplished thus far by the governmental expert groups on the subject;

3. Invites other relevant organs and bodies of the United Nations system and other relevant international organizations to take into consideration in their work as appropriate, individually and in the context of the work of the Inter-Agency Group on Reverse Transfer of Technology, the economic, social and developmental aspects of the reverse transfer of technology and the international initiatives on policies in this area at the multilateral level.

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