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THE ROLE OF QUALIFIED NATIONAL PERSONNEL IN THE  
SOCIAL AND ECONOMIC DEVELOPMENT OF DEVELOPING COUNTRIES

Report of the Administrator

Summary

In response to operative paragraph 4 of General Assembly resolution 33/135, this report is submitted to the Governing Council for its consideration and eventual transmission through the Economic and Social Council to the thirty-fifth session of the General Assembly. The report has been prepared on the basis of an outline (DP/409) approved by the Governing Council at its twenty-sixth session (decision 79/13) and subsequent resolution 1979/52 of the Economic and Social Council.

The Secretary General requested the UNDP to act as the "lead organization" for this purpose, and the report has been prepared in close collaboration with all United Nations agencies. The findings and recommendations thus reflect the extensive experience of the United Nations system with diverse national systems of training and utilizing qualified national personnel.

The report covers all developmental sectors cited in resolution 33/135 and pays special attention to the subject matters listed in operative paragraph 2 of that resolution. In addition to the main recommendations presented in section IV, specific recommendations are presented for each of the main subject areas in section V.

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## I. INTRODUCTION

1. This report has been prepared by UNDP, acting as the "lead organization" within the United Nations system, in response to the request of General Assembly Resolution 33/135. It has been prepared in close co-operation with all United Nations development system organizations on the basis of an outline approved at the twenty-sixth session of the Governing Council<sup>1/</sup>, and further to resolution 1979/52 of the Economic and Social Council.

2. The General Assembly called upon the Secretary-General, in close co-operation with the Administrator of UNDP and with the assistance of the executive heads of the United Nations system organizations concerned, to undertake a study containing concrete recommendations on the training of qualified national personnel in developing countries in accordance with respective national plans, as well as on enhancing the role of qualified nationals in a number of development sectors. The Economic and Social Council resolution specifically requested that this study take into account the national experiences acquired in all countries.

3. In response to General Assembly resolution 33/135 this report is based on the contributions of United Nations agencies and organizations, and on the results of consultations within the framework of the relevant subsidiary bodies of the Administrative Committee on Co-ordination. As requested in the Economic and Social Council resolution, particular emphasis has been given to reflect the United Nations system's experience with diverse national programmes. Although it was not possible to contact Governments individually, the views and experiences of Governments were available to the United Nations through decisions of intergovernmental meetings, numerous evaluation reports and daily contacts with operational activities in Member States.

## II. MAIN ISSUES IN HUMAN RESOURCES DEVELOPMENT

4. Development of human resources<sup>2/</sup> should increasingly be recognized by Governments to be as fundamental an aspect of development as the creation of the physical infrastructure. Experience shows that capital investments which are not linked to similar investments in human resources development rarely achieve their full impact.

5. Despite major efforts by developing countries, shortages and imbalances of qualified national personnel and the under-utilization of available personnel continue to hamper the implementation of national development plans. Thus, a great challenge faces the developing countries and the international community in the coming decade: to develop and upgrade human resources across the board so that all countries are able to manage their national resources, choose and adopt suitable technologies and achieve social and economic growth which benefits all segments of the populations.

6. At the outset distinctions should be made between: (a) immediate shortages of trained manpower; (b) medium and long-term manpower needs; and (c) comprehensive

<sup>1/</sup> Decision 79/13.

<sup>2/</sup> This report uses the term "human resources development" to describe the interrelated nature of training, utilization, and the role of nationals.

manpower and human resources development plans. Because most developing countries, shortly after their accession to independence, had to replace a large number of expatriate personnel with qualified nationals<sup>3/</sup>, immediate solutions had to be found to such difficult questions as: who to train, for what purpose, how and with what resources. Thus, very few countries had the opportunity of progressively developing comprehensive plans for human resources development. This continues largely to be the case today.<sup>4/</sup>

7. While some of the most disadvantaged and newly independent countries will for some time continue to meet specific short-term needs, they should increasingly attempt to follow a medium-term approach. Future needs should also be seen in the context of over-all balanced and integrated social and economic development.

8. Experience of the United Nations system, which takes account of the national experience acquired in countries, shows that:

(a) Many countries continue to pursue a fragmented approach to human resources development and to pay little attention to creating an adequate information base regarding current and future supply and demand of qualified personnel on which plans and programmes for the necessary development of human resources could be based;

(b) This approach does not produce the broad range of skills, including management skills, which are required by developing economies;

(c) Therefore, improved planning and human resources development should be carried out which, by taking account of the relative stage of development of a country, would provide the required manpower and conditions for their effective utilization;

(d) Such planning should be based on a constantly improving employment and manpower information system which would ensure that the following areas in manpower planning receive more attention:

- (i) A broader perspective of "manpower assessment and planning" activities;
- (ii) More emphasis on labour market information, collection and analysis, in particular the catching and interpretation of signals emitted by labour markets in order to facilitate a better understanding of the causes of labour market imbalances and the appropriate means of dealing with them;
- (iii) A more flexible use of such various tools of labour market enquiry and analysis as the statistical recording of employment services operations, employment/establishment surveys, tracer studies; and

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<sup>3/</sup> The term qualified nationals is used in this report to mean persons who have the competency to perform the tasks assigned to them.

<sup>4/</sup> According to ILO Convention No. 142 of 1975 on Human Resources Development, policies and programmes should take account of: (a) employment needs, opportunities and problems, both regional and national; (b) the stage and level of economic, social and cultural development; and (c) the mutual relationships between human resources development and other economic, social and cultural objectives.

(iv) The development of such complementary sources of qualitative manpower and employment information as the key informants' system in order that a comprehensive range of information and perspectives can be obtained.

(e) Such planning should emphasize "software" as compared to "hardware" and deal with qualitative issues, including the reform of education, linkages with employment and other social and economic issues described below;

(f) The role of technical co-operation should be to enhance this process by paying special attention to the absorptive capacity of each country and the implementation of programmes of a long-term nature.

9. In addition, Governments may wish to consider to review policies which directly enhance the development of human resources. These policies may touch upon:

(a) Political and economic issues which are relevant to human resources development, including effective employment and investment policies;

(b) Educational issues, such as the comprehensive reform of educational systems and the implementation of policies which harmonize the expectations and demand for general and higher education with the actual needs of economies for certain specific skills, within the context of limited resources;

(c) Social and cultural issues which facilitate the optimal use and participation of all trained individuals in the economic and political life of their countries. Consideration should also be given to the introduction of policies which foster greater use of vernacular languages;

(d) Scientific and technological issues such as the creation of an environment which promotes research and development, the free flow of information and reversal of the "brain drain";

(e) Planning issues such as the identification of required manpower for the implementation of national plans, including the identification of human resource requirements in order to optimize capital investments. (As concerns technical co-operation, it is desirable to the extent feasible, that human resource requirements should be identified and available national personnel should be earmarked at the time of the preparation of the country programme.)

10. Recent international decisions, including those related to the New International Economic Order, have identified human resources development as a key area for action. It is recognized that the shortage of skilled manpower, the mismatch of available skills with the over-all developmental requirements of countries, as well as the increasing pressure of population growths on the limited number of educational and training facilities, constitute a major challenge to national and international development efforts.

11. While the developing countries rely primarily on their own resources and on local approaches and methodologies, international technical co-operation will continue to play an important supporting role. The nature of this support will probably change as countries achieve greater capacity. Traditional approaches to technical co-operation in the form of experts, equipment and training abroad are increasingly giving way to greater involvement and utilization of local talent and resources.

### III. SPECIFIC ISSUES

#### A. Industrial development

12. The creation of scientific and technological capacities in developing countries depends upon the provision of qualified personnel, facilities and funds. The major limiting factor is human resources development, a long-range undertaking. The balanced growth and purposeful use of qualified personnel in turn depends upon policy formulation and planning capability. The staff of science and technology policy-making bodies requires a type of formal training and expertise not yet found in conventional educational establishments, although efforts are underway to design curricula and organize training seminars to resolve this problem.

13. Programmes for strengthening industrial and technological capabilities should encompass a variety of levels, extending from skilled workers to such personnel as industrial engineers, production engineers and managers. The skill requirements usually concern not only the production process but also information, technology acquisition, planning and policy formulation, innovation, research and development, design and consultancy. The training of personnel through actual execution of projects and direct work experience is generally the most effective approach.

14. To promote industrial diversification, programmes should also be directed to the training of artisans, the improvement of traditional technologies and occupations, as well as the promotion of self-employment.

15. Industrial skills are often acquired through such training arrangements as industrial co-operation contracts concluded between enterprises of developing and industrialized countries.<sup>5/</sup> Yet developing country enterprises wishing to acquire technology and industrial know-how often lack information on existing suppliers and their relative quality, as well as experience to negotiate successfully. It would seem that measures should be designed to facilitate decisions on the:

(a) Choice of the best technology;

(b) Making of more effective arrangements for training; and

(c) Improving the negotiating ability of developing country enterprises, including their skills in drafting technology transfer arrangements.

16. Training facilities in the developed countries comprise mainly training in industrial firms and at technical institutes. There is general agreement that the use made of these facilities by trainees from the developing countries could be expanded considerably, yet certain obstacles must be recognized and dealt with. For instance, curricula and training programmes may have to be designed or adapted to suit the backgrounds and needs of the foreign trainees, and expanded to include higher-level technical and managerial personnel; language difficulties may have to be overcome; problems of socio-cultural differences may arise within the institution itself and within the community. Provision to cover any additional training costs may have to be made.

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<sup>5/</sup> Under the system of consultations established by the Lima Declaration and Plan of Action, a consultative meeting for training will take place in 1981.

17. In developing countries, support of engineering schools continues to be one of the major activities. More projects now include post-graduate training. Increasing use is being made of short-term consultants, in place of full-time experts, as national staff have become more qualified and experienced. Also, it has often been possible to arrange an exchange of personnel under project activities so that links are formed with other institutions.

18. Several obstacles stand in the way of realizing the TCDC potential in the area of acquiring industrial skills: for example, the limited number of facilities available; a lack of information on the availability of training facilities, the poor quality of the training services offered; the inadequacy of physical facilities, and social and political barriers. Another frequent obstacle is a pronounced preference of nationals of developing countries for training in industrialized countries. To realize the potential benefits of co-operation in training among developing countries, Governments of these countries may consider making special efforts to strengthen regional and interregional co-operation in training (strategies, policies and institutional framework), and to adapt existing training facilities to the needs of trainees from other developing countries.

19. Although there is a clear need for more and better training if industrial technology and skills are to be developed effectively and domestic technological capacities established, many existing facilities are significantly under-utilized. Most industrial enterprises in developing countries have not yet recognized their potential and responsibility for the development of their own training capabilities. Governments of developing countries, therefore, may consider influencing managers of public and private enterprises to re-assess their training requirements and to provide their own in-service programmes. They may also give consideration to adopting policy measures to provide closer links between the formal educational system and the training requirements of industry, and to the adaptation of existing training facilities to meet more effectively the immediate and future requirements of industry. Finally, there is no doubt that many "practical artisans" of small-scale enterprises constitute a potential source of skill transmission often ignored by development projects.

20. Based upon a United Nations system evaluation of the experience of Industrial Research and Service Institutes (IRSI) established in developing countries, it was recommended that staff development be strengthened. It was demonstrated that twinning arrangements between the IRSIs in developing countries and IRSIs in developed countries had enhanced their effectiveness and thus should be encouraged. Finally, it was found that relations with universities were minimal, hence greater efforts were required in order to benefit from their scientific and technical competence.

#### B. Science and technology

21. The development of industrial skills is crucial to the creation of technological capacity, particularly within the context of the Lima Declaration and Plan of Action. These skills are required at the national level for industrial and technological policy formulation, as well as its implementation and monitoring, and at the enterprise level for: (a) preparation of prefeasibility and feasibility studies; (b) arranging the required financing; (c) selection and acquisition of an appropriate technological package and its adaptation to local conditions; (d) construction, erection and commissioning of an industrial facility;

(e) absorption of the technology and the efficiency of the facility by national personnel; and (f) development of a local capability to improve and transfer the technology and replicate the industrial facility.

22. At the recently concluded United Nations Conference on Science and Technology for Development the following points were considered important:

(a) It is now realized that increased emphasis should be placed both on strengthening the capabilities of the developing countries themselves to create, adapt and apply science and technology in accordance with their own needs and circumstances, and on improving the conditions under which they can acquire technologies from the developed countries;

(b) Many countries recognize the need for a reorientation of efforts more towards their own requirements and values, and for a closer articulation of science and technology activities with the economic, industrial, agricultural and social goals of society as a whole. Rather than being considered as a distinct, modern approach, science and technology should become an organic part of the activities of each society, within its own cultural context;

(c) The role of the education system both specifically in the teaching of science and specialized skills, and more generally, is of central importance in ensuring that science and technology become coherent parts of national culture.

These points were also stressed in the Programme of Action of the Conference.

23. The United Nations Conference on Science and Technology for Development recommended, inter alia, the establishment of an Interim Fund for Science and Technology for Development to be administered by UNDP. This was endorsed by the General Assembly in its resolution 34/218. The Interim Fund will aim at "promoting the objectives and implementing the measures recommended in the Vienna Programme of Action". A major part of this Programme of Action consists of recommendations on how to "establish scientific and technological manpower capacity in developing countries" through actions to be taken by Governments and international organizations at the national, regional and global levels. As a consequence, the prospectus for the Interim Fund states in paragraph 4 that support will be given, inter alia, " .... to the education and training of the human resources required at all levels to generate and implement science and technology development policies, plans, programmes and projects .....".

24. Perhaps nowhere so much as in the fields of science and technology is international co-operation so essential. The range of specializations is so broad, the "state of the art" in such constant flux, and the cost of material facilities so heavy, as to make separate and insulated national efforts wasteful. The realities of optimum scientific and technological development are such as to require technical co-operation among developing and developed countries. There are at least four major areas in which international co-operation can help in creating adequate scientific and technological capacities in developing countries:

(a) The over-all development of the national institutional infrastructure for scientific and technological research and training (promoting the formulation of science and technology policy);



(b) The improvement of scientific and technological education (in particular, the training of engineers and technicians);

(c) The creation and strengthening of local scientific and technological research capacity, including "inventive capacity", in order to enhance both the absorption of technological transfer and the adaptation of appropriate technologies; and

(d) The strengthening of patterns of intercountry co-operation in scientific and technological research.

### C. Public health

25. Despite the efforts of Governments, international bodies and private organizations, which for many years have tried to improve health care delivery, the results achieved have not led to a major improvement in the health status of the populations. In 1973, the WHO Executive Board presented a report on the state of the world's public health services in which it was stated that "in many countries the health services are not keeping pace with the changing population either in quantity or in quality. It is likely that they are getting worse". Such dissatisfaction occurs in the developed countries as well as in the third world where the main issue was considered to be "a failure to meet the expectations of the populations". Often health and health services do not have high priority nor an important share of the national budget. Consequently, two-thirds of humanity does not have access to proper health care.

26. In September 1978, the International Conference on Primary Health Care in Alma-Ata issued a Declaration which made it clear that primary health care is the key to attaining an acceptable level of health for all by the year 2000. This can be considered as a turning point in the history of public health and the starting point for the implementation of a new strategy to provide primary health care as an essential part of community development supported by all levels of the health system. The Declaration emphasized the relationship between health and other socio-economic sectors and it established health as an essential element of the quality of life which is the common denominator of all political, social and economic endeavours.<sup>6/</sup>

27. Health personnel play a dual role: in health development and in community development. This role varies according to the level at which health personnel is posted and emphasis is placed on a "bottom to the top" approach. Planning should follow the same approach and should start with problems of rural and peripheral urban areas where most of the population lives. Health personnel thus play a different role according to the level at which they work. This means, for instance, that the village health workers should be considered competent when they are able to function effectively in the community. Similarly, physicians in charge of a district or rural hospital can be considered as qualified when, in addition to their traditional curative and preventive tasks, they have been prepared to organize, supervise and monitor the role of personnel posted in centres or

<sup>6/</sup>H. Mahler, Action for Health, 32nd World Health Assembly, Geneva, May 1979.

dispensaries placed under their responsibilities. Qualification can be equated with competence only when it means proper preparation, training or experience which enable the personnel to perform efficiently the tasks they are assigned. Health personnel often enjoy a special position within their community which could be an additional asset to their role in development.

28. Village health workers or community health workers are required to meet the basic health needs of the communities as identified by both the population through their representatives and the village or community health workers with the support of their supervisors. Needs usually include treatment and control of the most common diseases and the improvement of environmental health. Workers should be instructed to refer difficult cases to the next level of the health services. Apart from their role in the health field, village and community health workers should participate in local community development committees.

29. At intermediate levels, medical assistants, public health nurses, sanitarians and similar personnel should be in charge of a team responsible for a health centre, as well as for the dispensaries in neighbouring villages. This health centre should serve as the first level of referral and also as a base from which support, advice and supervision is provided to village and community workers. These health centres should also refer upward the cases which require the attention of those with higher qualifications.

30. At the district level, physicians should be in charge of a rural hospital covering the population of the whole district. The management of primary health care services should be undertaken from that level in close association with the rural centres of the intermediate level with whom the planning of the work, organization, supervision, monitoring and evaluation should be done. The physician should be helped by a team of dentists, pharmacists, nurses, medical assistants and sanitarians. At this level, the health personnel also participate in development activities, including health components in agriculture, industry, education and other sectors. The higher the level, the more qualifications are needed. At these higher levels, policies and strategies should be elaborated to plan and implement the development of health services.

31. Public health should be the concern not only of health personnel but of the entire population and particularly of all qualified personnel whatever their field of activity. Health problems are linked closely to other development problems requiring the participation of all sectors in the promotion of health and improvement in the quality of life. Personnel working in various sectors, be it agriculture, industry or artisans should also contribute to the promotion of public health.

32. Personnel active in the social sector outside health require competence too in dealing with some health problems. For instance, school teachers need to bring medical first-aid to their pupils and may include health education in their teaching.

33. Occupational health is also part of public health and measures should be taken by both those who are responsible for employing workers and those in charge of health activities to ascertain that proper working conditions are provided to prevent accidents or disease.

#### D. Integrated Rural Development

34. The World Conference on Agrarian Reform and Rural Development (WCARRD) held in July 1979, emphasized that "the sustained improvement of rural areas in the context of the promotion of national self-reliance and the building of the New International Economic Order requires a fuller use of human skills and energy". Rural development was seen by the Conference as a part of strategies, policies and programmes designed to benefit rural populations, particularly the rural poor. While any activity that is intended to benefit rural people can be called rural development, when these activities have a multi-sectoral and multi-level character they are termed integrated rural development.

35. The Declaration of Principles and Programme of Action of WCARRD summarizes major themes inherent in integrated rural development which have emerged from national experiences. Four of these themes have particular relevance for the role of qualified national personnel: the need to have a comprehensive approach at national, regional, and local levels; the need to provide access to economic and social inputs; the critical importance of people's participation in the rural development process; and the relevance of technical co-operation among developing countries (TCDC) as a vehicle for improving national self-reliance.

36. The ineffectiveness of single-sector approaches to rural development is now recognized by most Governments. At the same time, they see the need to deal simultaneously with rural problems through comprehensive or integrated strategies and programmes which cut across traditional ministerial lines. Such an approach requires a broad understanding of the nature of rural poverty as well as of policies and technical means needed to make an attack on the rural situation in its totality. It is this orientation which should guide the preparation of qualified national personnel for planning and carrying out activities in the field of integrated rural development.

37. The degree of impact that can be achieved in such programmes depends in large part on the training of both national officials and rural populations. For example, many types of officials will have to be prepared at a number of levels if integrated programmes are to succeed. These will include:

- (a) National policy and planning generalists;
- (b) National technical and management specialists;
- (c) Middle-level generalists for programme preparation and implementation;
- (d) Middle-level sectoral specialists of ministries and agencies; and
- (e) At the local level, semi-skilled monitors, facilitators and promoters.

38. The officials to be trained can be broadly divided into generalists and specialists at various levels who need additional understanding and skills for reaching rural populations and working with them in ways that promote self-reliance and participation. Many of the sectoral professions have overlooked these skills, and for that reason it will be necessary to provide special courses for agronomists, engineers, educators, health workers, administrators, co-operative managers and others to fit them into the integrated rural development system.

39. In the case of generalists, the integrated approach is crucial for creating innovative planning and programme management approaches that draw from the established sectoral techniques but go beyond them to new combinations and more efficient models. Since the integrated programmes do call for a wide range of services and resources, generalists should also be helped to devise improved channels of communications and more effective mechanisms of co-ordination among agencies, and by agencies with rural people. Because most personnel in rural development have been prepared in a single profession, their skills tend to be compartmentalized and narrowly disciplinary. Hence, it is necessary to provide supplementary training in order to enable them to undertake generalist assignments.

40. Training strategies which emphasize middle-level generalists and technical preparation for integrated rural development are still uncommon in developing countries. For example, colleges of agriculture, engineering, medicine and public health, public administration and others do not like to adjust their instructional programmes to fit the demands of middle-level personnel which to them would be considered a step backward. In some developing countries, the posts of middle-level technicians and generalists are not included in the civil service structure, thus discouraging the recruitment of qualified personnel. In these situations, the middle-level technical work is often performed of necessity by generalists. This partly explains the growing demand for middle-level, in-service training for rural development programmes in many countries.

41. In general, current efforts can be characterized as insufficient to meet the enormous demand for rural development technicians and generalists which has been generated by the availability of loan and grant programmes of international lending institutions, by the new national strategies of self-reliance in food production and by the creation of additional government programmes and institutions of integrated rural development in developing countries. Not enough effort has been made to see integrated rural development as a new field of technical and generalist activity which requires a continuous flow of young officials especially trained for new programmes and institutions. Few countries have taken steps to plan and implement the institution building that is necessary to prepare the large numbers of personnel that will be required for rural development in the remainder of this century.

42. Similarly, in the use of the communications media for promoting rural development, capabilities lag behind the requirements of the rural population. Great advances have been made in recent years in strengthening and refining the materials and techniques of low-cost mass media for rural development. The increased use of radio and television has been encouraging. These technologies permit a rapid and effective integration of rural populations into the psychosocial and political processes of development; increasingly they are being used for dissemination of technical information, marketing news and training courses. Several countries have been building national systems of television coverage by satellite in order to provide training linkages between government programmes and rural communities. Further expansion of these mass media networks can be expected in the years ahead, with an effective impact on rural development training at the popular level.

43. A distinctive characteristic of rural development projects, particularly those directed at the rural poor, is that they require simultaneous interventions by several multiplier change agents. Farmers often fail to respond to technical instruction alone even if its merit has been repeatedly demonstrated in research of

pilot projects. Too much is at stake, and traditional ways of life and labour rule out risky acceptance of new techniques or technologies. Consequently, projects will have to accommodate secondary multiplier agents in addition to the qualified national technicians. Traditional chiefs, extension technicians, school teachers, health workers, co-operative leaders, traditional midwives, all have a role to play in the multisectoral aspects of rural development.

44. Although women's roles in farm decision-making and work have long been recognized, training for rural women continues to be neglected.<sup>7/</sup> Most government extension services including extension training centres, are staffed and directed by men.<sup>8/</sup> Rural women need access not only to such centres and positions, but also to different structures and opportunities. Few projects enroll rural women in unconventional structures. Often, it is difficult to identify qualified national personnel with whom such innovative types of projects may be developed. For rural women, the immediate need is not generally employment, since they often suffer from overwork. In the first instance, knowledge and skills likely to relieve them of the drudgery involved in their combined household and farm tasks are needed. This emerging area of daily life skills, in itself an extension and development of the appropriate technology strategy, is still largely unexplored.

45. Training of the rural population itself will be crucial as a means of mobilizing the direct participation of local groups and organizations for decision-making and programme implementation. Since it would be impossible to train and mobilize the entire population of a region, locally-recruited monitors and facilitators may serve as aides and multipliers. This makes possible the rapid extension of programme coverage with a limited number of government technicians. The nature of this training for the rural population will differ significantly in content and emphasis from sectoral training. After the demonstration of organizing local co-operative groups through selection of monitors and model farms, variations of this approach have been tried with success in many countries in order to get direct participation of farmers in new practices, use of agricultural inputs and management of production credits. This is one example of how farmer training can be achieved at low cost by a multiplier approach.

46. Training for rural development participation at the local level does overlap with both formal and non-formal educational programmes in many ways. However, in many developing countries the penetration of adult groups for training begins through the extension of agricultural, co-operative, health and infrastructure activities into rural areas under the umbrella of integrated rural development. Where formal educational services exist, or are being extended into the countryside, these should, of course, be broadened in the context of rural development particularly to enhance the potential role of youth in the programme. In those countries having non-formal rural education programmes, close co-operation among ministries will be required to harmonize the subject matter covered in these activities. Moreover, the non-formal education offers an effective tool for promotional training for popular participation in decision-making, as in "animation rurale" and functional literacy teaching.

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<sup>7/</sup> World Bank, Rural Development: Sector Policy Paper (World Bank, Washington, D.C., February 1975), p. 9.

<sup>8/</sup> See Employment, Growth and Basic Needs: A World Problem (Geneva: ILO, 1976) p.61.

47. Finally, it should be said that experience in newly-emerging nations has shown that integrated rural development will require a new kind of training based on the desire for self-reliance and a new institutional order. In too many cases, the transition from colonial traditions was based on the mistaken idea that nothing more was needed than to replace a foreign bureaucracy with an indigenous one. Training of public officials went along on the old colonial lines. Only recently has it become evident that new models and practices of training will be needed to help release and combine the energies and inspiration of rural people with those of a new kind of public servant trained in participation, social communication and mobilization in the setting of integrated programmes for rural areas.

48. From the observations above, specific conclusions can be formulated about the provision of qualified national personnel for integrated rural development programmes in the developing countries along the following lines:

(a) Opportunities and needs for training of qualified national personnel are perhaps nowhere greater than in the newly emerging field of integrated rural development. All countries are encountering constraints in programme planning and implementation in rural development because of a lack of adequately trained specialists and generalists at various levels. Specialists should become more familiar with the nature of multi-sectoral development and generalists should have sufficient knowledge of the main sectors of rural development.

(b) It is noteworthy that many Governments and institutions are converging in their thinking that integrated rural development can occur only with the direct and organized involvement of rural people, who therefore also require massive training assistance in order to enable them to participate effectively in the development efforts of their countries.

(c) The shortage of qualified national personnel for rural development is felt most keenly at the points of linkage between government mechanisms and rural people, implying that high priority should go to training which can meet the needs of local institutions and organizations. It is also important that adequate incentives be provided for qualified staff to stay for longer periods in the remote rural areas.

(d) Much evidence can be found that Governments and international agencies tend to over-allocate resources for high-level training while ignoring the greater benefits that might accrue from an expansion of middle-level training for integrated rural development, as also from using technology geared to the immediate needs of rural populations.

(e) Training for integrated rural development is par excellence the area in which rapid and enormous benefits could be reaped from TCDC exchanges and relationships, since the training does not require sophisticated and costly technology, and, moreover, should come primarily out of the successful adaptations and experiences of the developing countries themselves.

(f) Unquestionably the need for training of qualified national personnel for rural development provides a major challenge to the United Nations family of organizations to create and support such assistance through a restructuring and reorientation of the mechanisms of international technical co-operation.

## E. Foreign trade

49. The experience acquired in development planning projects is of special relevance to enhance the role of qualified national personnel in trade and development and related areas of industrial economic co-operation. This experience is analyzed in a study of the subject undertaken by organizations of the United Nations system<sup>9/</sup> which emphasized that:

(a) There were two main types of training activities leading to the development of planning skills: formal training, consisting of fellowships, study tours and in-country seminars; and in-service training, including in-house workshops and on-the-job training. With regard to formal training, it was pointed out that fellowship recipients often did not work in the planning agencies on their return. "Bonding", i.e. requiring a returning fellow to spend a minimum period of time (at least equal to the duration of the fellowship) in the planning office, was practised by only a few Governments.

(b) The use of study tours to visit planning agencies or other appropriate institutions in other countries was a particularly effective training method in those situations where the planning agency was sufficiently developed to benefit from a high-level "transfer" of knowledge, achieved by the fellows without traditional academic course structures.

(c) In-country courses, properly designed and conducted, were found to be a relatively cost-effective method of training. There are, however, only a few institutions capable of organizing and co-ordinating such courses.

50. The expansion of foreign trade is an essential element in the plans of practically all developing countries. As plans for diversification of their economies advance, Governments are assigning an increasingly higher priority to the foreign trade sector, and related areas such as transport, insurance and finance. The very considerable expenditure by Governments on foreign trade activities necessitates appropriate measures, both domestically and abroad, to support this sector of their economies.

51. The successful implementation of national development programmes in foreign trade requires a nucleus of personnel in each country trained in the appropriate techniques. In many countries, the lack of such personnel has limited the effectiveness of foreign trade policies and programmes. There has been an expansion of training opportunities in foreign trade in developing countries, as a result of the priority now given to this sector by Governments in their national economic development plans. The facilities available, however, are still very limited, both in the over-all sense and in the range of expertise available. The United Nations Conference on Trade and Development (UNCTAD) and the International Trade Centre UNCTAD/GATT (ITC) are very conscious of the need to strengthen training institutions in developing countries which provide instruction in foreign trade and various remedial actions are being introduced.

52. The urgent need to provide training for key personnel has been clearly stressed by developing countries in the priority they attach to this area in their national programmes and in the support they have provided to the training activities undertaken by UNCTAD and ITC.

<sup>9/</sup> UNDP/UN/IBRD.67.

53. In UNCTAD's technical co-operation training programme, a high priority is given to two major activities:

(a) Policy level programmes in foreign trade and related areas for economic co-operation, which include commercial policy, shipping, insurance, money and finance; and

(b) Operational level programmes in the above areas and in trade promotion; the latter is undertaken by ITC.

54. The commitment by Governments to the retention of trained staff is an essential prerequisite to any successful foreign trade development programme. This commitment includes not only providing employment opportunities to qualified staff, but also offering career advancement opportunities in the specialization, and planning for staff replacement and development. Governments may consider to give priority to creating cadres of trained staff with career opportunities in their specialization in the commerce, and other trade related ministries, as is the case, for example, in most national health, agriculture and industry ministries in developing countries.

55. TCDC is an important component of the technical co-operation programmes in foreign trade (UNCTAD and UNDP have agreed to launch a programme in support of economic and technical co-operation among developing countries.) Within the trade context, TCDC is seen in a complementary role to economic co-operation among developing countries (ECDC), and its development is clearly related to the mutuality of interests of the participating countries. The traditional orientation of developing countries has been for trade with developed countries and, in consequence, a considerable proportion of technical expertise provided in foreign trade has come from the latter countries. With the increase of mutual trade among developing countries, there is a corresponding increase in the recruitment of experts from these countries for technical co-operation activities.

56. The utilization of qualified national personnel in foreign trade should be considered from two aspects:

(a) The recruitment, training, assignment and provision of career opportunities to their officers in specialized areas is the responsibility of individual Governments; and

(b) The utilization of qualified developing country personnel, within an intercountry TCDC framework, is a complex matter which varies by region, technical function and product, market and national government policies. The extent of inter-regional and intra-regional trade between developing countries is another factor, as is the willingness of individual Governments to release their qualified personnel for assignments in other countries.

57. The International Development Strategy refers to the need to promote, by national and international action, the earnings of developing countries from invisible trade: inter alia, the expansion of their national and multinational merchant marines. The basic problem is that the developing countries' share in world shipping is constantly declining because of their lack of technical expertise, since many developing countries do not have the necessary qualified nationals to man ships and shore installations. Developing countries are lagging



behind the rest of the world as a result of numerous technical innovations that are revolutionizing the shipping industry. If the objectives related to trade are to be achieved, developing countries have to start with a sound technical base. As experience has shown, countries which enter the realm of shipping without the necessary expertise face certain failure.

58. The development strategy for the next decade, in which special attention will be given to transport (and shipping) should re-emphasize the importance of enhancing human resources in developing countries both by increasing basic education and by upgrading existing skills in the shipping field. Emphasis should be given to improve specialized training in order to create the technical capabilities for meeting immediate needs.

59. IMCO's activities in the field of technical co-operation focuses on training of specialised personnel through the establishment of maritime training institutions on a national, subregional or regional basis in order to assist Governments in building up their technical cadres to man their off shore and on shore maritime facilities.

60. As regards to training of national personnel, IMCO's experience shows that refresher courses, technical seminars and training arrangements should be carried out to keep technically qualified personnel abreast of developments in the specialised field of shipping and related matters.

61. On a regional basis, the creation at the government level of a network of professionals with similar technical tasks and the promotion of cross-fertilization and cross-participation of experiences should promote regional approaches to problem-solving.

#### F. General and technical education and vocational training

62. From the developed world, many developing countries have inherited education systems which rarely respond to their needs and which are expensive relative to available resources. They provide education which is not adapted to the environment of the population and which cannot reach all the people. Therefore, many developing countries have launched educational reforms or developed innovations, including such complementary educational services as adult literacy programmes, "second chance education", pre-vocational training, and various skill-oriented, non-formal programmes.

63. Various representative international forum, in particular international and regional conferences organized by UNESCO and the ILO, have continuously emphasized that education must become relevant for development. The Preparatory Committee for a New International Development Strategy has identified future education objectives as follows:

"Educational and training programmes will be so designed as to increase productivity substantially in the short run and to reduce waste. Particular emphasis will be placed on teacher training programmes and on the development of curriculum materials to be used by teachers .. Increasing use will be made of modern equipment, mass media and new teaching methods to improve the efficiency of education. Particular attention will be devoted to technical training, vocational training and retraining. Necessary facilities will be

provided for improving the literacy and technical competence of groups that are already productively engaged as well as for adult education. Developed countries and international institutions will assist in the task of extending and improving the system of education of developing countries, especially by making available some of the educational inputs in short supply in many developing countries and by providing assistance to facilitate the flow of pedagogic resources among them."

64. The Lima Declaration and Plan of Action stressed:

"... that the educational system be adapted in order to give young people an appreciation of industrial work and that policies and programmes should be adopted to train the qualified personnel needed for new sources of employment created in the developing countries, at the regional and subregional levels. The training activities linked with the industrial development must be conceived in such a way that they make possible the processing of natural resources and other raw materials in the country of origin and the establishment of permanent structures for specialized, rapid large-scale and high-quality training of national labour at all levels and professional specializations, whether technical or managerial without discrimination with regard to sex ..."<sup>10/</sup>

65. The majority of educational reforms are aimed at introducing a suitable combination of technical streams leading to employment and preparatory streams which lead to higher studies, as well as the promotion of diversified forms of secondary vocational, technical and agricultural education. But attempts by ministries of education in a number of countries to "vocationalise", "prevocationalise" or "ruralise" educational curricula have met with limited success. In certain African countries, not only students but also parents were opposed<sup>11/</sup>. More ambitious plans inspired by the comprehensive school approach are being tried out in an attempt to eliminate the dichotomy between academic and vocational education. Neglect of the learning needs of the adult working population constitutes a further critical area for increased action through functional literacy campaigns and the provision of extension services. As pointed out above, enterprises and industry in general are more or less divorced from the learning scene.<sup>12/</sup> Greater efforts should be made to increase adult education planning as part of comprehensive national education development efforts.<sup>13/</sup>

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<sup>10/</sup> Lima Declaration and Plan of Action on Industrial Development and Co-operation adopted by the Second General Conference of UNIDO at its final plenary meeting, Lima, Peru dated 12-26 March, 1975.

<sup>11/</sup> See, for example, Growth, Employment and Equity: A comprehensive Strategy for the Sudan (Geneva: ILO 1976), page 125.

<sup>12/</sup> Exceptions are the national comprehensive training schemes in Latin America (the first one established during the 1940s in Brazil and Argentina) and notably the Servicio nacional de Aprendizaje (SENA) in Colombia (established in 1957) SENAs demonstrated that skills development in both urban (including informal urban) and rural sectors are but one indivisible learning problem, best dealt with by one central apex organization.

<sup>13/</sup> An international survey on professional training facilities for adult education has been compiled by UNESCO and will be published shortly.

66. A greater effort may be made to define a new type of teacher who can more actively interact with his community. Also, pre-service and in-service training should be integrated into one comprehensive training system, including supervisory personnel who will play an important training function, as well as a role in diffusing innovations. Co-operation with other sectors should also be more prevalent.

67. If formally qualified instructors were to remain the only vehicle for the transmission of skills, most developing countries would not only find themselves short of vital operatives but would, furthermore, miss an opportunity of extending the benefit of knowledge to vast numbers of people on whose efforts further development largely depends. But a major obstacle to the introduction of low-cost, non-formal learning systems is the seeming reluctance of local populations to admit that "barefoot" instructional intermediaries are not necessarily lower quality staff.

68. Technical education and vocational training, to a far greater extent than primary or secondary general education, is an expensive undertaking. On the other hand, certain types of vocational training can be dispensed through low or even no-cost structures and, to a far greater extent, through non-formal apprenticeship schemes. Although there is strong social resistance towards practical non-formal learning structures, suspected of being second-best opportunities, this type of training remains worthwhile since it can be offered informally. Experts have concluded that whenever technical education is given in institutions which are part of the formal education structure the expectations of the students may pervert the intentions of the planners.

69. Training activities for the development and improvement of science and technology education, in the context of general innovation of education, should emphasize relevance to local needs, with special reference to rural development, and aim at encouraging national qualified personnel to develop teaching materials using local resources. Particular attention may also be given to the practical applications of science and technology and to the use of cost-effective methods and materials.

70. International assistance has often co-operated in general education programmes, usually at a high multiplier point through the training of trainers and key educational staff. International co-operation, is, increasingly, taking the form of short-term missions instead of long-term, institution-building activities. Fellowships to education institutions of developing countries are being emphasized in order to make training more relevant. Direct support is provided to developing countries to plan and manage their own fellowship and training programmes, and administrative procedures are being made more flexible to meet these new requirements. The strengthening of national capacity in curriculum development and educational methods, supported by innovative networks which have been developed on the basis of TCDC, has proved effective. Further efforts need to be made to train national personnel for the strengthening of planning and administration of education.<sup>14/</sup>

<sup>14/</sup> UNESCO is providing important training opportunities for educational planners and administrators at national, regional and international levels. Its International Institute of Educational Planning is organizing annual training courses for top-level educational planners and administrators.

71. With regard to more effective utilization of internal resources, one of the chief recommendations to emerge from an ILO employment strategy mission to Africa concerned the provision of "second-chance" opportunities. The purpose is to upgrade an ever-expanding number of potential beneficiaries mostly drawn from the poor strata of society; projects would not only have to be for them, but mainly with them. The linking of education and employment continues to be essential, particularly for the integration of women into development efforts of their countries. Training programmes should provide greater opportunities for women to enhance their participation in, and receipt of, benefits from the economic life of their countries. Efforts may be intensified to provide coeducational programmes in technical and professional secondary education.

72. A majority of countries are devoting a considerable proportion of their resources for education. Educational expenditures constitute one of the most important items of national budgets. In the 1970s, public expenditures on education in many countries tended to grow more slowly than in the previous decades. Moreover, much of the limited increase is being eroded by inflation. In a number of countries the proportion of national budgets devoted to education is diminishing. Thus, the mobilization of additional resources for education emerges as a major problem. The following two tables illustrate the trend.

Table 1

a)	<u>National per-capita public-expenditure on education (1976)</u>	
-	North America	\$500
-	Developed countries	285
-	World average	120
-	Least developed	10
b)	<u>Primary-school enrollment (age group: 6-11)</u>	
-	North America	99.3 per cent
-	Developed countries	93.4 per cent
-	World average	70.1 per cent
-	Least developed	40.8 per cent
c)	<u>Secondary-school enrollment (age group: 12-17)</u>	
-	North America	95.0 per cent
-	Developed countries	84.5 per cent
-	World average	50.3 per cent
-	Least developed	6.8 per cent
d)	<u>Pupil-teacher ratio (primary school)</u>	
-	North America	20/1
-	Developed countries	21/1
-	World average	28/1
-	Least developed	45/1*

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\* Those few LDCs who have managed to obtain primary-school enrollments close to the world average of 70 per cent have done so by stretching the pupil-teacher ratio beyond tolerable limits: 71/1 in Malawi; 67/1 in Central African Republic; 55/1 in Bangladesh, etc.

Table 2

Changes between 1960 and 1965 and 1970 and 1975/76 in  
Educational Expenditures as a percentage of the National Budget

Region	Number of countries included <sup>a/</sup>	Change 1960-65		Change 1970-75/76		
		Increase	Decrease	Increase	Decrease	Same
Africa	21	13	8	9	12	-
Arab States	7	4	3	1	6	-
Asia	15	8	7	7	8	-
Latin America	10	8	2	1	8	1
Europe	19	12	7	4	14	1
Total	72	45	27	22	48	2

a/ Only those countries were included for which enough data were available.

Source: Statistical Yearbook 1967, UNESCO 1970  
Statistical Yearbook 1977, UNESCO 1978  
Latest educational statistics, UNESCO 1979

Changes between 1960 and 1965 and 1970 and 1975/76 in  
Educational Expenditures as a percentage of GNP

Region	Number of countries included <sup>a/</sup>	Change 1960-65			Change 1970-75/76		
		Increase	Decrease	Same	Increase	Decrease	Same
Africa	28	21	6	1	16	11	1
Arab States	13	8	3	2	6	7	-
Asia	18	13	3	2	11	6	1
Latin America	17	17	-	-	7	8	2
Europe	25	22	2	1	17	7	1
Total	101	81	14	6	57	39	5

a/ Only those countries were included for which enough data were available.

Sources: Statistical Yearbook 1967, UNESCO 1970  
Statistical Yearbook 1977, UNESCO 1978  
Latest educational statistics, UNESCO 1979

### G. Voluntary migration

73. Skilled manpower from developing countries exists in substantial numbers in the developed countries as well as in other developing countries. In recent years, skilled workers have migrated for economic reasons. This migration has brought certain benefits to the individual workers (increased earnings); to the host country (addition of readily usable manpower to its labour force); and to the country of origin (source of foreign exchange through emigrants' remittance).

74. Foreign workers in developed countries constitute an important reservoir of skilled manpower. Some have acquired not only industrial skills that are needed in their countries of origin, but even more important, many have adopted new attitudes towards work. To ensure that this source of manpower shall be used effectively, recommendations are provided in section V.

### I. International technical co-operation

75. As has been emphasized in the previous sections, technical co-operation has played an important role in meeting certain of the requirements of developing countries in qualified personnel, either through direct operational assistance, or through the formulation of medium-range strategies for the training of qualified nationals. Yet much remains to be done to train national personnel more effectively, make better use of available human resources, and provide improved means and a wider-range of options to developing countries to avail themselves of the most applicable experience and services required to mobilize their own potential. Among the diversified means available to developing countries are:

(a) A wide range of co-operation programmes at the national level designed to train and utilize national personnel. This includes such methods as twinning of institutions, network arrangements between similar projects, use of non-resident nationals<sup>15/</sup>, financing of national experts, government execution, and use of national subcontractors;

(b) Participation in intercountry programmes linked to the development needs of each country in the region; and

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<sup>15/</sup> In this connexion, mention may be made of a new UNDP-sponsored programme for "Transfer of Know-How Through Expatriate Nationals" (TOKTEN) which is assisting eight countries to bring home for short consultancies their distinguished scientists, engineers and managers now residing abroad. International travel and living expenses are met by the programme while consultants donate their services to their countries of origin. Notably successful in Turkey, TOKTEN has now started operations in Egypt, Greece, Pakistan and Grenada. China, India, Sri Lanka and the Philippines are expected to follow suit later this year. Returning expatriate nationals are very effective in transfers of technical expertise on specific problems identified by Governments, because their advice is generally more appropriate and acceptable and can be arranged promptly and at low cost. The co-operative links these consultants forge often last long past the brief span of their missions. United Nations system sponsorship provides an effective point of re-entry for the returning consultants, and some may even decide to return permanently. Results to date show that TOKTEN is a cost-effective, additional dimension of technical assistance.

(c) A growing number of interregional and global activities designed to search for new solutions to development problems and to share the findings with all countries.

76. Projects receiving international assistance are, by definition, self-liquidating mechanisms which are designed to make a contribution to the development of national expertise and institutions before phasing out. Maximum interaction and two-way communication between international and national personnel at the project level are a means of sharing technical knowledge and skills and of implementing projects effectively. Local approaches to training national project personnel should become the primary approach, including the use of local data and training materials and the use of national languages rather than foreign languages. Projects should increasingly be based on the concept of participation of concerned populations. Embodied in the concept of participation is also the notion of linkages. For instance, a vocational training project could interact with educational research centres, universities, employment services, vocational guidance and orientation services, and/or productivity institutes.

77. Training key personnel for possible high-multiplier effect has been a major aim of the United Nations system, although this approach is not without problems. Some trained key personnel are not able to keep abreast of development in their field, while others find it difficult to share what they have learned because of professional isolation, not having the opportunity to pass on new knowledge, lack of facilities to train others, or a combination of these. In the case of fellowships which are part of action projects, fellows have sometimes returned at the end of the project to find that the project has not been continued by the Government.

78. Institution-building generally encompasses assistance in planning, and the establishment or strengthening of permanent educational and training institutions and their facilities. The assistance usually includes the provision of initial teaching staff, fellowships for training abroad of national staff, and the provision of equipment and teaching materials. While the institution-building approach has several strategic values, it is costly and takes fifteen to twenty years to be self-sustaining at an effective level. Many trained and highly qualified national personnel transfer to better-paying private sector jobs. It is recommended that developing countries adopt policies and sound practices for encouraging qualified national personnel to serve in the positions for which they were trained.

79. With regard to institutional twinning, United Nations family experience has shown that support of efforts of national centres of excellence to become self-reliant should constitute the first phase. Only when a certain degree of self-reliance has been attained can the centres be used meaningfully for TCDC and twinning arrangements. Short of formal twinning arrangements between institutions in developing and other developing or developed countries, the system gives high priority to the placing of fellows from developing countries in identified centres of excellence in other developing countries with similar environments.

80. The emergence of a certain number of "centres of excellence" in all the developing regions is an encouraging trend. The further creation of similar centres, however, requires the prior clarification of certain basic options such as:

(a) The relationship between the intercountry centre and the constituent institutions and Governments (This is a delicate issue, in particular where the constituent institution is a non or semi-autonomous national agency.);

(b) Areas and levels of concentration (Unbridled desire to grow might encroach on national responsibilities.);

(c) Feedback mechanisms (The benefits that each national participant derives may be fluctuating and uneven; policy boards may find it difficult to redirect long-term intercountry projects.).

81. The purpose of conducting training at the regional level is the exchange of experiences and information within the regions, maximising the utility of a scarce expertise and techniques or facilities within a given region, or studying common regional problems and possibilities. The conditions required, based on United Nations system experience, for effective utilization of training output at the national level in intercountry and regional training programmes may be enumerated as follows:

(a) The intercountry or regional training programme should be related to the specific training or action programmes in the countries where the trainees come from;

(b) The training activities and content should be relevant to the needs of the participating countries, which should be involved in the planning of the training courses;

(c) Provision should be made by the Government for fair remuneration and/or work incentives for returning qualified national personnel, including the formulation of a structured career path.

The latter two conditions are the most difficult to achieve. Problems are associated with the level of professional or political maturity of the Government's nominating system, and with the low economic level of the country or absence of a national progress policy on the issue of remuneration for returning personnel.

82. It should, however, be emphasized that most intercountry projects are well suited to deal with high-level learning needs and less appropriate for middle and low-level requirements, where national structures are warranted.

83. In order to achieve optimum utilisation of existing qualified national capacity, including increased participation of technicians in decision-making, the United Nations system is contracting a variety of activities to national institutions, such as:

(a) "Development support" (technical advisory work, preparation of feasibility studies, sector or sub-sector studies, special surveys, data collection, and preparation of guidelines and manuals);

(b) "Servicing" (provision of facilities, construction of buildings, installations, use and maintenance of machinery and such services as editing, translating and printing of documents);



(c) Training (involving employment of national experts as resource persons, sponsoring of seminars, workshops, courses, study tours and the production of training materials); and

(d) Research (including mono and multi-disciplinary adaptive research, field trials and demonstrations).

84. The ability of the United Nations system to respond with flexibility should be reviewed. A case in point is the need, for instance, to intersperse theoretical training of key personnel with practical on-the-job experience. An internationally-assisted project may be operational even if international expertise is not physically maintained during the on-the-job practical phase. The limited amount of supervision and counseling that may be called for, during the practical stage, could be ensured through short-term recurrent consultant missions or, preferably, through some twinning or networking arrangements where feasible. It is believed that building a far longer time-horizon, with breaks or interruptions used to acquire work experience, is preferable to second or third-phase projects which often constitute an admission of crisis or inadequate attainment of objectives. In the case of the least developed countries, this proposal assumes particular relevance.

#### IV. GENERAL RECOMMENDATIONS

85. From the preceding analysis, the following general recommendations to governments are derived :

(a) Adopt and implement policies and programmes which foster links between human resources development and other economic, social and cultural objectives and, in particular, which promote public and private initiatives, complementary formal and non-formal systems for general, technical and vocational education and training and the effective utilization of qualified national personnel in all branches of economic activity and at all levels of skill and responsibility;

(b) In order to influence directly and enhance the development of human resources to review such policies as:

(i) Employment and investment policies;

(ii) Education policies which harmonize actual needs with the demand for education within the context of limited resources;

(iii) Social and cultural policies which facilitate the participation of all individuals in the economic life of their countries;

(iv) Science and technology policies which promote research and development, the free flow of information and the reversal of the brain drain;

(v) Planning policies which identify the human resources required to implement national plans including those needed to optimize capital investments;

(c) Ensure that national policies and programmes are formulated in a long-term perspective and are integrated in over-all social and economic development planning;

(d) Plan and monitor human resources development increasingly on the basis of a comprehensive system of manpower management information which would enable accurate and timely identification of skill requirements, as well as current and future supply and demand imbalances;

86. Special care should be taken to ensure that human resources development programmes provide equal opportunities for women and men in education, training and employment.

87. Progress in human resources development in the next decade will require an increase of resources, the bulk of which will have to be mobilized internally. Governments may wish to note that considerable savings may be realized by implementing comprehensive and longer term programmes which permit a more efficient and effective use of scarce resources. At the same time, there will be an increased need for external resources to support national human resources development programmes, including interim financing of recurrent costs and joint funding with other donors.

88. Governments may wish to make maximum use of TCDC by systematically identifying the part of their requirements which can be met by drawing upon the pool of qualified expertise in other developing countries.

89. In view of the key role of public administration in developing countries, Governments may wish to review the role, responsibility and contribution of civil services in the training and utilization of qualified national personnel, including the training of public administration officials.

## V. SPECIFIC RECOMMENDATIONS

### A. Industry

90. In this sector special consideration may be given by governments to:

(a) Identify the range of industrial and technological skills required and the existing gap in countries;

(b) Adopt policy measures to provide closer links between the formal educational system and the training requirements of industry;

(c) Adapt existing training facilities to meet more effectively the immediate and future requirements of industry;

(d) Develop a comprehensive approach to meeting industrial training needs, including the integration of existing and the establishment of new facilities;

(e) Identify which training should be undertaken in local facilities and which should be undertaken abroad;

(f) Increase the effectiveness of government policies and procedures to encourage and facilitate investment in training of human resources by local enterprises and to regulate industrial co-operation activities in order to build up a technological capacity; and

(g) Promote the growth of industrial and technological services required for industrial development; and

(h) Create capacity at the middle technical and managerial levels through practical "hands-out" and "on-the-job" programmes.

91. It may also be desirable over the next decade for Governments to consider how to:

(a) Establish programmes adapted to the backgrounds and experience of the foreign trainees so that the industrial training provided can be most effective;

(b) Improve co-ordination at the national level of training facilities to be used by trainees from developing countries so as to utilize fully the capacity of existing facilities. It is important to be able to tap the training potential of small and medium-scale enterprises, largely ignored at present;

(c) Extend the scope of present training to include higher-level technical and managerial personnel (in this regard, it appears that some industrial firms are reluctant to accept higher-level personnel for training for fear that proprietary information will be lost);

(d) Influence enterprises to strengthen guarantees and reduce the restrictive clauses in their training contracts with firms in other developing countries;

(e) Ensure that contractual commitments between firms in different developing countries are fully implemented;

(f) Provide financial and institutional support to firms that have concluded training contracts with firms in other developing countries;

(g) Identify needs to be met by enterprises of developing countries and of the corresponding services to be provided;

(h) Verify through the supplier the actual needs of the developing country enterprise;

(i) Assess the supplier's capacity to provide the services contracted;

(j) Evaluate and select the most effective training methods to be employed; and,

(k) Assess the purchaser's capacity to monitor contract performance and ability to adapt to changing needs and conditions.

92. Finally, to improve the terms and conditions of training contracts, Governments of developed and developing countries may give special consideration to ways of:

- (a) Bringing receivers and providers of training programmes together more effectively and matching demand to supply;
- (b) Improving precontractual negotiations between the parties;
- (c) Assisting the parties in writing the contract; and,
- (d) Assisting the parties in avoiding and resolving problems that may arise during the implementation phase.

#### B. Science and technology

93. In the area of science and technology it is important both to strengthen the scientific and technological capabilities of developing countries themselves and to improve the conditions under which they can acquire technologies.

94. Activities in science and technology should be closely articulated with the economic, industrial, agricultural, health and social goals of society as a whole.

95. Greater emphasis needs to be given to the role of education systems in the teaching of science and specialized skills to ensure that science and technology become part of national culture.

96. More favourable conditions need to be created to develop scientific and technical research and promote inventive activity, including the free flow of information, granting of research funds and incentives to inventors and the establishment of a scientific community.

#### C. Public health

97. The following recommendations to Governments for strengthening public health care are derived from both the analysis in this report and the recommendations of the International Conference on Primary Health Care in Alma-Ata (1978):

(a) to give high priority to the full utilization of human resources by defining the technical role, supportive skills and attitudes required for each category of health worker according to the functions that need to be carried out to ensure effective primary health care;

(b) to develop teams composed of community health workers, other developmental workers, intermediate personnel, nurses, midwives, physicians and where applicable traditional practitioners and traditional birth attendants;

(c) to support the reorientation and training of existing personnel and revise programmes for the training of new community health personnel;

(d) to provide social and technical training and motivation to health workers, especially physicians and nurses in order that they may serve the community;

(e) to ensure that all training includes field experience. Physicians and other professional health workers should be urged to work in under-served areas early in their careers;

(f) to give due attention to continuing education, supportive supervision and preparation of teachers of health workers and health training for workers from other sectors.

D. Rural development

98. Priority should be accorded to training which can meet the needs of local institutions and organizations to provide the linkage between government mechanisms and rural people. In addition, incentives should be provided to keep qualified staff for longer periods in remote rural areas.

99. Training programmes need to be geared to making specialists more familiar with multi-sectoral development programmes and ensuring that generalists have sufficient knowledge of the main sectors of rural development.

100. Policies are needed to encourage broad-based participation in the economic and social life of the country and facilitate the participation of qualified personnel in integrated development activities at various levels (village, city, district, etc.).

101. Middle level training for integrated rural development needs to be expanded and technology should be geared to the immediate needs of rural populations.

102. Special attention may be given to TCDC exchanges and relationships in rural development in order to provide training which comes primarily out of the successful adaptations and experiences of developing countries themselves.

103. United Nations organizations need to re-orient their mechanisms for international co-operation to provide more effective training of national personnel for rural development.

E. Foreign trade

104. Governments may wish to consider to assign greater priority to planning the development of human resources in foreign trade.

105. In the area of foreign trade greater commitment is needed to develop cadres of professionals in commerce and other trade-related ministries as has been done in most national health, agriculture and industry ministries in developing countries; such commitment would also entail the provision of employment opportunities of qualified personnel, retention of qualified staff, career advancement opportunities in the specialization, planning for staff replacement and development.

106. With the increased emphasis placed on economic co-operation among developing countries, determined efforts are needed by Governments to support requests for release of their qualified trade personnel for assignments in other countries.

107. Developing countries may wish to compile rosters of their qualified nationals, and efforts should be aimed at reversing the brain-drain. Qualified nationals residing outside their country of origin may be given preference as a means of attracting their return to their countries of origin. Support could be considered for the improvement of training facilities in technical and specialised fields related to trade and development issues.

F. General, technical and vocational training

108. The eradication of illiteracy through a whole range of programmes addressing youth and adults alike should be regarded as an integral part of any broad-based human resources development. More research and development is called for in order to devise new methodologies and approaches likely to reach an ever-growing number of persons.

109. It is recommended that efforts be made to use fully existing and potential capacity and resources, including those of public and private enterprises for general and technical education and vocational training of qualified national personnel. This could be achieved through improved co-ordination and organization and wider use of such non-formal learning methods as apprenticeships, on-the-job training, mass media, mobile units and self-instruction programmes.

110. In order to enhance practical and further training, particularly on managerial and supervisory levels, training should be provided through such different approaches as in-service training and self-development programmes and the upgrading of training institutions.

111. With a view to facilitating mobility, occupational guidelines and standards should be developed for education and vocational training of qualified national personnel, especially in occupations of key importance for economic and social development, such as instructors, supervisors, specialists and managers. Vocational information should be provided to this effect on a continuing basis through, in particular, the employment services and other related social agencies.

112. Non-formal education and training should be used as complementary strategies to formal programmes, giving special emphasis to participatory techniques and equal weight to work experience and formal education in assessing the levels of qualifications.

113. The following additional recommendations are raised for consideration:<sup>16/</sup>

(a) Efforts should be made to broaden the resource base for education both through greater economy and cost-effectiveness in the use of existing resources, as well as by devoting a greater share of national resources for education in budgets and by more active community participation. Adequate and mutually consistent mechanisms of educational planning and administration are of key importance in this connection, including participation in educational planning of teachers, their unions, students and community leaders.

(b) Further consideration should be given to linking education and productive work as reflected in a large number of educational reforms.

(c) Non-formal educational activities should be used more widely in co-ordination with formal education in order to ensure greater participation of communities in development.

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<sup>16/</sup> Further recommendations will be formulated in connection with the report The right to education, to be prepared in response to General Assembly resolution 34/170.

(d) The special education, training and employment requirements of such disadvantaged groups as out of school youths, handicapped persons, and migrants should be accorded a higher priority in line with the provisions of ILO's recommendation No. 150 concerning Vocational Guidance and Vocational Training in the Development of Human Resources, adopted in 1975, as well as the recommendations of the 37th session of the International Conference on Education (UNESCO, 1979) and Regional Conferences of Ministers of Education, convened by UNESCO in Asia (1978) and in Latin America (1979).

G. Brain-drain<sup>17/</sup>

114. This issue has been dealt with throughout this report. Among the approaches which United Nations organizations have found in the long run to be the most effective in turning the tide of brain-drain are the following:

(a) The formulation and application of a national science and technology policy which would enhance national research and development capabilities and enable developing countries to become less dependent upon "pre-packaged" technology and increasingly able to adapt "appropriate technology";

(b) The rationalization and harmonizing of national investment in high-level technology via mutual understandings at the regional and sub regional levels concerning those institutions, centres of excellence, etc., which are most apt to carry on the high-technology functions (training, research and application) and which a single country might find particularly onerous to finance;

(c) The creation and strengthening of network arrangements whereby the techniques, innovations, and achievements of specialists and qualified staff in developing countries can be enriched and multiplied through contact and exchange with professional colleagues in other countries.

(d) The promotion of programmes which facilitate the return of nationals living abroad (as well as former nationals who have acquired a new nationality) to work in their countries of origin for specified periods.

115. A fellowship-placement approach which is instrumental in helping to reverse brain-drain is the policy of placing fellows in training institutions in, or close to, their countries of origin whenever feasible. This has the double advantage of reducing the cost of training while minimizing the temptation of long-term expatriation.

116. It is recommended that policies dealing with qualified national personnel and the reversal of the brain-drain ensure:

- (a) Training relevant to the job functions to be performed;
- (b) Quality of service through effective management of personnel;
- (c) Job security with career mobility;
- (d) Job satisfaction, including adequate financial remuneration; and
- (e) Working conditions that encourage continuity of service with special attention given to deprived areas.

<sup>17/</sup> See also A/34/593.

#### H. Voluntary migration

117. To ensure that the skills of workers engaged in voluntary migration are used effectively, Governments may wish to:

(a) Adopt policies specifically designed to upgrade the skills of foreign workers in sectors and types of skills needed by the home countries of these workers;

(b) Facilitate the re-integration of workers returning from abroad so that they can make full use of the skills the workers have acquired;

(c) Examine the possibility of channeling this source of skilled human resources to developing countries other than the workers' country of origin.

#### I. International technical co-operation

118. To further strengthen the utilisation and training of qualified national personnel, the United Nations system can assist Governments in:

(a) Establishing and maintaining "skills data banks" to permit "tracking" of trained national personnel and thereby eliminate importation of specialists to undertake tasks for which trained nationals are available but not visible<sup>18/</sup>;

(b) Increasing the number of field projects providing short-term employment of qualified national experts, or giving national experts priority when recruiting short-term consultants/experts before recruiting international experts;

(c) Ensuring proper execution of contracted activities to national institutions by formulating explicit terms of reference, and providing systematic short-term support;

(d) Recognizing the need for long-term funding for training in order to avoid delays;

(e) Making arrangements to link consultants to training efforts over a longer period of time; and

(f) Institutionalizing ad hoc training activities at available training institutions and centres of excellence are.

119. A long-term perspective should be used in identifying and planning technical co-operation including multi-sectoral identification of training needs in conjunction with national development plans and programmes. The annual review of the UNDP country programme process may be used to determine, in collaboration with United Nations organizations, how the United Nations system can support national policies and programmes for human resources development. In particular, United Nations organizations can, where Governments wish, collaborate in analyses and planning to establish needs for human resources development in different sectors.

<sup>18/</sup> The UNDP Special Unit for TCDC would seem well-placed to backstop such an effort.