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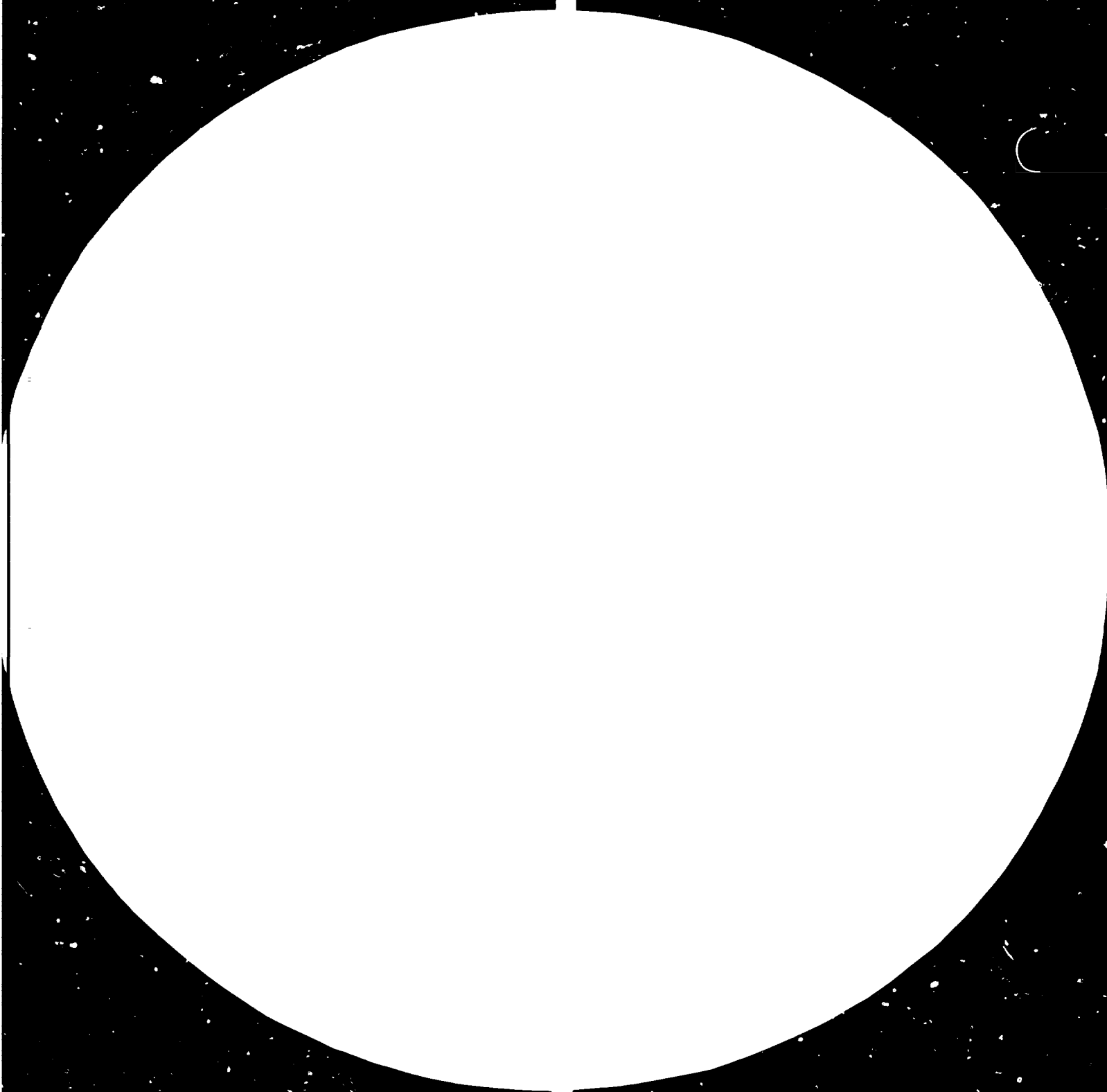
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First Consultation on the Training
of Industrial Manpower

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ISSUES FOR POSSIBLE CONSIDERATION BY THE
FIRST CONSULTATION ON THE TRAINING OF INDUSTRIAL MANPOWER*

Prepared by
the secretariat of UNIDO
in collaboration with
the secretariats of ILO and UNESCO

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PREFACE

The System of Consultations

The Second General Conference of the United Nations Industrial Development Organization (UNIDO), held at Lima, Peru, in March 1975, recommended that UNIDO should include among its activities a system of continuing consultations between developed and developing countries with the object of raising the developing countries' share in world industrial output through increased international co-operation.^{1/}

The General Assembly, at its seventh special session in September 1975, in its resolution 3362 (S-VII), decided that the System of Consultations called for by the Lima Declaration and Plan of Action should be established at global, regional, interregional and sectoral levels^{2/} and that UNIDO, at the request of the countries concerned, should provide a forum for the negotiation of agreements in the field of industry between developed and developing countries and among developing countries themselves.

The System of Consultations has been established under the guidance of the Industrial Development Board. At its fourteenth session, the Board decided to establish the System of Consultations on a permanent basis with the following main characteristics, including those described in its past decisions:

(a) The System of Consultations should be an instrument through which the United Nations Industrial Development Organization (UNIDO) would serve as a forum for developed and developing countries in their contacts and consultations directed towards the industrialization of developing countries;^{3/}

^{1/} "Report of the Second General Conference of the United Nations Industrial Development Organization" (ID/CONF.3/31), chapter IV, "The Lima Declaration and Plan of Action on Industrial Development and Co-operation", para.66.

^{2/} Official Records of the General Assembly, Seventh Special Session, Supplement no.1, para.3.

^{3/} Official Records of the General Assembly, Thirty-fifth Session, Supplement no.16, para.151(a).

(b) Consultations would also permit negotiations among interested parties at their request, at the same time as or after consultations;^{4/}

(c) Participants of each member country should include officials of Governments as well as representatives of industry, labour, consumer groups and others, as deemed appropriate by each Government;^{5/}

(d) Final reports of the Consultations should include such conclusions and recommendations as agreed upon by consensus by the participants as well as other significant views expressed during the discussion.^{6/}

Consultation on the Training of Industrial Manpower

The Board, at its thirteenth session, authorized UNIDO to convene in 1981 a First Consultation on the Training of Industrial Manpower. Due to a lack of financial resources this Consultation has had to be postponed to 1982.

In 1978 the Board decided that "an inter-secretariat working group should be established by UNIDO, in collaboration with UNESCO and ILO, with a view to examining the ways of maximizing the use of industrial manpower training facilities existing in developed and developing countries and to exploring their potential for expansion in relation to the needs of developing countries. The Executive Director of UNIDO should report to the Board at its thirteenth session on the results of the group's work, with a view to recommending to the Board, if appropriate, the convening of a Consultation Meeting on the Training of Industrial Manpower".

The UNIDO/ILO/UNESCO Working Group was established in December 1978; it suggested that preparations for the First Consultation should examine the potential for:

(a) Greater use of existing training facilities in the developed countries for the benefit of developing countries;

^{4/} Ibid., para.151(b).

^{5/} Ibid., para.152.

^{6/} Ibid., Thirty-second Session, Supplement no.16, para.163.

(b) Greater use of existing training facilities in the developing countries and the need for their expansion to allow, inter alia, for increased co-operation among developing countries;

(c) Improving contractual arrangements for the acquisition of industrial skills.

In 1979 a report was prepared by UNIDO, in consultation with ILO and UNESCO, entitled "The acquisition and development of industrial skills by developing countries" (ID/CONF.4/8).^{7/} This report was considered by member countries at the Third General Conference of UNIDO (ID/CONF.4/22, paras.202 to 210); the developing countries noted the similarity of their proposals to those contained in the UNIDO document, while all countries generally supported it.

In May 1981, an Expert Group Meeting considered a paper prepared by UNIDO on "Issues for possible consideration by the First Consultation on the Training of Industrial Manpower" (ID/WG.341/1) which elaborated and refined the issues submitted to UNIDO III, taking into account the comments made at the Third General Conference and the conclusions of preparatory work undertaken by UNIDO in 1980. The Expert Group Meeting, in its report (ID/WG.341/3), considered the issues to be of particular relevance to international co-operation in industrial training, namely:

- Issue 1: The existing training capacity in developed countries, its potential utilization and adaptation for developing countries
- Issue 2: The potential utilization of existing training capacity in developing countries by other developing countries
- Issue 3: The potential role of international organizations and of national institutions with international training objectives

^{7/} This document will be made available at the Global Preparatory Meeting for the First Consultation on the Training of Industrial Manpower.

INTRODUCTION

1. Following the mandate given by the Industrial Development Board and the establishment of the UNIDO/ILO/UNESCO Working Group, the UNIDO secretariat undertook a number of investigations on the capacity of developed and developing countries to train manpower for industry. Although no satisfactory statistical data was available, it has been possible to determine that the existing capacity could be better utilized if information were better organized and co-ordinated with regard to existing capacities and the needs of developing countries. The following paragraphs summarize the main reasons why capacity is not optimally utilized in developing countries and in developed countries for the benefit of the industrialization of developing countries.

The present training capacity in developing countries

2. One of the basic problems with which industrialization in developing countries is faced is that formal education systems have generally been established on the pattern of similar institutions in the industrialized countries and thus tend to reflect the values, needs and infrastructure of these countries. Consequently, they are not generally able to provide graduates with appropriate industrial skills for direct entry into the work force. In the long run, adaptations need to be made; in particular, training facilities to complement the formal education system should be established. In the short run, special efforts will have to be made to meet immediate, urgent training needs by fully mobilizing the existing resources.

3. Although in many cases there is a need for more training facilities, many existing facilities are significantly underutilized. Many reasons for this state of affairs can be cited. For example:

(a) In formulating their industrialization strategies, plans and policies, developing countries do not seem to have sufficiently recognized that training is long term in nature and needs to be treated as an integral part of their planning.

(b) Enterprises in developing countries have generally not considered the importance of training from the time a project is conceived; furthermore, given the daily problems with which entrepreneurs are faced, they have not always had the time to deal with the complex problems of the training required by their enterprises.

(c) Programmes of existing training institutions do not correspond with actual manpower needs and the technologies being used by enterprises.

The present training capacity of developed countries and its potential utilization by developing countries

4. At present, the majority of exporting enterprises is only secondarily concerned with training industrial manpower for developing countries. The training which may be provided by them is generally limited to the operation of the plant or equipment being sold. The level of training provided concentrates on the skilled worker level and to a lesser extent on the higher level (engineers, managers etc.); the major gap is found to be at the intermediate level (technicians) whose knowledge is crucial to translate a theoretical technological process into actual production; similarly, a gap is found in training of trainers whose multiplier effect is vital to developing countries. In other words, only partial and fragmentary training is provided by enterprises of developed countries.

5. As a consequence, exporting enterprises have often to rely on the education system or training institutions of the developed country. This poses the complex problem of how to link the technological capacity of the enterprise with the pedagogical capacity of the training institution.

6. In many instances, it is the education system of developed countries which is called upon to provide training at the higher levels. The formal education system reflects the values and needs of the country concerned and is usually supplemented by well-developed training facilities for further training.

7. On the basis of these and other investigations, UNIDO, in collaboration with ILO and UNESCO, has endeavoured to draw certain conclusions as to the future organization, scope and content of international co-operation in the field of training industrial manpower. Issue 1 presents some of the key problems to be overcome, not only in regard to relations between developed and developing countries, but also to those between developing countries themselves (Issue 2), and to the activities of international organizations (Issue 3).

ISSUE 1: THE EXISTING TRAINING CAPACITY IN DEVELOPED COUNTRIES, ITS
POTENTIAL UTILIZATION AND ADAPTATION
FOR DEVELOPING COUNTRIES

The implications of the Lima Declaration and Plan of Action

8. The training needs of developing countries should be considered within the context of the Lima Declaration and Plan of Action and of the establishment of a New International Economic Order. In the 1960s, international relations had been characterized by an accelerated move towards political independence of third world countries followed by the assertion of their economy sovereignty; these were two necessary but not sufficient conditions to enable the third world countries fully to control their development. A third element is the establishment of a technological and training capacity which is a compulsory channel through which the industrialization process must pass if the capacity of developing countries to take decisions autonomously is to be progressively increased.

9. The difficulty is that developing countries will have to acquire over a twenty-year period the technological know-how and skills which the industrialized countries developed progressively for over a century. The dimension of the problem is, therefore, extremely vast and complex; its analysis must be based on a full understanding of the interrelationships between education, training, and the process of industrialization; only then can some attempt be made at the planning and the development of a country's human resources.

10. In the short term, however, developing countries will continue to rely heavily on the developed countries for the acquisition of technology, related know-how and of the corresponding skills through the main forms of international co-operation. In fact, the nature of the demand of developing countries for industrial training has evolved considerably since the early 1970s. At first, it was acquired by individual or small groups of trainees to ensure that industrial plants operated successfully; more recently, developing countries have expressed demand also for the training of complete teams for production, maintenance and management purposes in connection with an industrial project and to some degree for the establishment of technology and training centres to support specific sectors of industry.

11. The investigations undertaken have shown the need to analyze the training which is provided for developing countries through the assistance from national (public or private) institutions, through bilateral and multi-lateral co-operation arrangements, and through commercial relations at the enterprise level. It appears that training provided through commercial arrangements has become relatively large when compared to that provided through assistance; furthermore, it is likely to continue to grow in correlation with the growth of exports of plant and equipment to the developing countries, so that a large world market for training is in the process of formation. However, this world market is a highly imperfect one, largely due to a lack of information on the existing training capacity in developed and developing countries, on the levels for which training may be provided in relation to specific technological processes. Furthermore, more analyses are required on the subject matter and content of training according to the professional categories within enterprises of different sectors of industry.

12. Enterprises in developing countries have not always recognized that training constitutes the main component of an industrial co-operation arrangement. They are generally not in a position to clearly define their own short and long-term training needs, nor to assess the capacity of a supplier to meet those needs, nor to control the implementation of the acquired training programmes. Hence, while training is expensive, the relatively weak partners from developing countries have often not been able to fully understand the importance of considering training of industrial manpower from the time a project is being conceived and of selecting a technology which they are in a position to master, thereby contributing to the establishment of a technological and training capacity. Furthermore, developing countries, while paying the prices presented to them by a supplier, have not always obtained the training programmes which correspond to their expressed demand. Many industrial projects have, therefore, ended in failure due to the lack of timely and in-depth consideration of the problems of training industrial manpower.

13. The Consultation should, therefore, consider the ways and means of rendering the world market for the training of industrial manpower more informed and better organized.

The organization of demand

14. The improved organization of demand, as well as the availability of information on its nature and content, would strengthen the capacity of developing countries, at the government and at the enterprise level, to take decisions on their training needs and on the choice of partners. Furthermore, it would ensure that training is fully taken into consideration from the time an industrial project is conceived, bearing in mind the qualifications of the local population and of its socio-cultural background.

15. The formulation of demand for industrial training depends on a variety of elements: the education system, the choice of technology, the priority sectors and industrial projects, the degree of integration into the national production process etc. It is consequently necessary to carry out continuously an analysis of the structure of industry, the interrelationships between existing industries, and of the training capacity of these industries in order to understand the nature of future changes in the structure of industry and the implications of these changes on the demand for industrial training.

16. In order to improve the formulation of demand, there is consequently a need for a close relationship between those who have the required information and those who use it. A link should also be established with those who are responsible for technology choice, since training programmes must correspond to a given technology and to its level of technological complexity. Such an approach analyzing the level of technological complexity has been developed by UNIDO and has been tested in the case of the capital goods industry in order to establish specific training programmes linked to the levels of complexity to be reached within a given time period.

17. The following question may therefore be raised: to what extent would it not be desirable to carry out a diagnosis of training needs at the national level, not only from an enterprise's point of view, but also taking fully into account the structure and pattern of industry and the technology and training capacity available in the developing country? This approach to international co-operation would strengthen the capacity of decision-makers in developing countries.

The organization of supply

18. The industrialized countries have adopted various approaches to industrial training; in the socialist countries, training constitutes an integral part of the planning process; in the countries with market economies, the situation depends on the importance of government involvement in economic development. However, it is generally accepted in industrialized countries that a minimum of co-ordination is required at the sectoral or national level in order to identify the most suitable training facilities available and to secure the access thereto by developing countries.

19. A first step in this direction has been taken in many developed countries through the preparation of an inventory or catalogue of the training capacity available for different sectors of industry, levels of skills, the teaching methods utilized etc. In some cases, a second step might be the existence of some organizational structure at the sectoral or national level in order to establish the appropriate contacts with the private or the public sector within the developed country. However, this step would have to be taken with great care, since there is a multiplicity of suppliers of training: government departments responsible for international co-operation, public and private training institutions, the education system, exporting enterprises etc.

20. Because of the variety of situations at present, which will no doubt become increasingly complex in the future with regard to the supply and demand for training, the following question should be raised: to what extent would it not be desirable to carry out a diagnosis of the supply available in the developed country from the viewpoint of the needs of developing countries by associating the latter to this diagnosis? In other words, the approach could be to simultaneously define the needs of developing countries and identify the training best suited to those needs. The general acceptance of such an approach in practice would permit the world market for training to become better informed as to the organization and content of both supply and demand.

Specific problem areas

21. The vastness and complexity of the acquisition of industrial skills by developing countries imply that all forms of international co-operation (commercial, bilateral and multilateral) must be mobilized in order to ensure that all aspects of training for industry are effectively covered. The following paragraphs describe some of the specific aspects which should be covered by international co-operation and which merit substantive discussion at the Consultation.

(a) It appears that more attention has to be paid to the training of trainers in developing countries, since neither their built-in multiplier effect nor their capacity to innovate and conceive training programmes in response to specific needs have been clearly understood. More specifically, priority should be given to the training of trainers in the following areas: teaching staff; personnel responsible for the organization of industrial training; managers of training programmes.

(b) Because of the dominant role of engineers in industry, their education and training is of crucial importance. This is well appreciated by developing countries, and high priority has been given to the establishment and expansion of engineering schools, often with the support of UNESCO. Nevertheless, problems of relevance and quality persist, and a continuing effort should be made to ensure that curricula reflect advances in technologies, in their structure and content and that they are appropriate to the national situation. In addition, engineers of developing countries need to build up their capacities in engineering conception and design, so that they can adapt and create technologies to meet the specific conditions prevailing in their countries.

In addition, it is necessary to overcome the apparent contradiction between the fact that technologies are continuously changing and increasingly interrelated, and the fragmentary and partial way with which they are dealt in university curricula; it might, therefore, be desirable to regroup skills in order that an individual become "technically literate" in a variety of technologies common to a number of industrial sectors.

(c) Shortages of competent technicians and higher technicians threaten the viability of many industrial projects in developing countries. This is a complex social and economic issue, involving problems of status, remuneration, education, and career structures. Training abroad for technicians is sometimes necessary, but long-term solutions appear to depend on vigorous action to promote and reform technician training and status in developing countries.

(d) The importance of management training has already been stressed by ILO. In developed countries there is a considerable capacity in management training institutions and in many enterprises that can be used by developing countries. Although efforts have been made to examine the needs of managers in developing countries and to adapt programmes, renewed attention should be paid to management related to the specific characteristics and production structure of different sectors of industry. More particularly, it is desirable to prepare training profiles related to the level of complexity of the management techniques required by different industrial sectors.

(e) Analyses made of training related to specific sectors of industry in connection with Consultations held at the sectoral level so far have pointed to the advantages and disadvantages of training of complete teams as opposed to the training of individuals. It would appear that in many cases, even when each trainee is extremely well trained, a plant may nevertheless not operate efficiently. It would be necessary, therefore, to verify whether this hypothesis is valid for different branches of industry, bearing in mind constraints of a socio-cultural nature.

(f) Continuous or permanent training has been neglected in most developing countries. At a time when technological changes occur in relatively short periods of time, personnel must have the possibility to be retrained to keep abreast with the latest technologies, production methods etc. In many developing countries a single enterprise may constitute nearly the entirety of the country's production in a given industrial sector; it has therefore little or no contact with other enterprises in that sector so that it gradually becomes "intellectually" isolated.

(g) The industrial output target set by the Lima Declaration and Plan of Action implies that masses of people in developing countries will have to be trained in various sectors and levels by the year 2000. The following question is therefore raised: to what extent can new teaching methods be conceived to permit the training of vast quantities of people? Recent experience in some developing countries has demonstrated that computer-programmed training can be used successfully for this purpose.

(h) The complexity and interrelationships between the problems raised above indicate that basic research is required to understand the importance of training for the individual, of teams, for enterprises, for an industrial sector, and for the economy as a whole. In this connection, the approaches to training for industry utilized in many countries (for example "sandwich", "dual" etc.) have to be examined as to their applicability to the economic and socio-cultural conditions persisting in developing countries.

22. The above-mentioned problems related to training concepts and to the training of specific categories of personnel stress the importance of selecting technologies which contribute significantly to the establishment of a national technology and training capacity from the time an industrial project is centrally conceived. For this purpose, renewed attention must be paid by developing countries to programming the development of human resources for industrial development; it also implies that international co-operation at the enterprise level, through commercial arrangements, and particularly at the government level through bilateral and multilateral arrangements, will be required to cover the above-mentioned problem areas.

Co-operation arrangements

23. Case studies have indicated some of the main problems encountered.
24. A first problem area arises because technology and training are generally tackled sporadically on a project-by-project basis and are not selected when an industrial project is initially conceived for their contribution to the recipient country's technological and training capacity. Technology and training should be the subject of long-term planning which would permit enterprises in developing countries to secure technological continuity and to move progressively to higher levels of technological and managerial complexity. This is the case, for example, of the capital goods industry. In order to ensure technological and managerial continuity, co-operation arrangements should be of a long-term nature allowing for the acquisition of skills and know-how related to the higher levels of technological and managerial complexity which are required if increasingly larger integration into the national production process is to be obtained.
25. A second problem area arises for the following reason: training institutions of developed countries possess training methods and techniques, but are not necessarily conversant with the plant, equipment and technology exported by a particular enterprise. Therefore, they must first fully familiarize themselves with that technology and only then be in a position to adapt training methods, prepare appropriate training programmes, and implement these programmes. A further consequence is that developing countries have to pay for the additional costs of the "familiarization process" of the developed country's training institution; in addition, they do not always have direct contact with those who develop the technology.
26. A third problem arises because developing countries' training institutions are generally not fully associated by the purchaser and buyer to the transfer and acquisition of technological know-how and of the related skills; this has resulted in that this know-how and skills benefit only a particular enterprise and not the developing country as a whole. It would therefore be necessary at the national level in a developing country: firstly, to involve those responsible for training to the acquisition of technology and related skills; secondly, to make available the acquired technology and skills to other enterprises and/or training institutions; and thirdly, to obtain the agreement of the supplier that the technology and skills sold will not be limited to the use by the purchaser alone, but

may be made available to other interested enterprises and/or training institutions.

27. A fourth problem area concerns contractual relations on the training of industrial manpower. Case studies in connection with the export of equipment, technology, licenses etc. to developing countries reveal that training is hardly considered when an industrial project is initially conceived. Furthermore, the training provided is partial and fragmentary, being given little importance. Contract provisions for industrial training generally fail to cover the following points in a satisfactory manner:

(a) the description of the context within which the acquisition of know-how, skills and related training programmes are to take place, that is in relation to the buyer's overall production objectives and to the industrialization objectives of the developing country;

(b) the identification of the know-how, skills and training programmes to be transferred; this relates to the objectives of the contract;

(c) the determination of the means through which such know-how and skills are to be transferred; this relates to the obligations of each of the contracting parties;

(d) the means of verifying whether the know-how and skills have been effectively transferred; this relates to the proof that all obligations have been satisfactorily discharged.

The financing of the training of industrial manpower

28. Financial institutions too are parties to the co-operation arrangements between enterprises and have a direct impact on the capacity of developed countries to provide industrial training to developing countries. Investigations undertaken show that increased attention has been paid by the World Bank, the EEC and others to the financing of the transfer of know-how and related skills.

29. However, much remains to be done, notably by the commercial banks and export credit institutions. The financing of training is not one of their prime objectives: rather the main objective is to finance the sale of plant, equipment etc. Yet, one important criterion for financing the export of plant and equipment is the existence of trained technicians, engineers, managers etc. There is, therefore, a vicious circle which must be broken. To this end, it is imperative that training of industrial manpower in developing countries be given top priority by financial institutions, since it is on this basis that viable projects can be identified and subsequently implemented.

30. To start off with, it is important that exporting enterprises, and particularly the small and medium-sized ones, be able to obtain financial resources to cover the preliminary and exploratory studies on the training needs of selected developing countries. The investigations undertaken, and the sectoral Consultations held so far, have shown that only seldomly are financial institutions ready to finance the costs of such exploratory studies.

31. Secondly, it is suggested that export credit institutions and other financial institutions from developed countries deal with industrial training as an integral part of social infrastructure of a developing country. In this way it might be eligible for financing on conditions similar to those applied to investments in physical infrastructure.

32. It is also suggested that official bilateral co-operation be used more effectively by complementing the provision of industrial training by enterprises, including those of the private sector, by providing for technical assistance, and particularly by financing the establishment of training centres for the developing country's priority industries. Investigations have shown that while this is the practice of some developed countries, it could become increasingly the general practice.

Points for discussion

33. The Global Preparatory Meeting is requested to consider the importance of the points raised under Issue 1 and to decide on whether they should be submitted to the Consultation. These points may be summarized as follows:

(a) The organization of information on the existing training capacity in developed countries corresponding to the demand from developing countries (paras.8-20);

(b) The importance of defining long-term training needs and of programming the acquisition and development of technology and related skills (paras.21-22);

(c) The desirability and content of long-term arrangements, including financial ones, designed to allow developing countries to meet their technology and training requirements; the improvement of the nature and content of contractual relations at the enterprise level for the acquisition of industrial skills (paras.23-27).

ISSUE 2: THE POTENTIAL UTILIZATION OF EXISTING TRAINING CAPACITY IN
DEVELOPING COUNTRIES BY OTHER DEVELOPING COUNTRIES

34. Co-operation between developing countries in the field of industrial training has a considerable potential which has so far not been explored

35. It should be recalled that there are several advantages to be reaped from co-operation between developing countries. It is generally agreed that the pattern of industrial development, institutional structures and technologies of developed countries, derived from different socio-economic conditions and factor endowments, do not always meet the specific needs of the developing countries. This applies even more to fields such as technology transfer and acquisition of industrial skills where similarity of socio-economic and cultural conditions and pattern of industrialization will largely determine the relevance to national training needs. Moreover, specific aspects, such as the reference to the recent experience of industrialization of the more advanced developing countries, and the cost of industrial training, appropriateness of curricula to training needs etc., exhibit clear advantages in favour of co-operation between developing countries. This potential has been reflected in various international fora such as the Ad hoc Intergovernmental Group of the Group of 77 on Economic Co-operation among Developing Countries (Vienna, June 1980) and the High-level Conference on Economic Co-operation among Developing Countries (Caracas, May 1981).

36. In approaching this issue, it should be stressed that the problems raised under Issue 1 are of equal importance for co-operation between developing countries; such is the case of the need for the organization of information on supply and demand in order to render the world market for training more informed and of the need for the different mechanisms of international co-operation to cover the training of different categories of personnel.

37. Regional centres, such as CINTERFOR in Latin America, CIADFOR in Africa, and ARSDEP in Asia, which have been established under the auspices of the ILO, might be able to contribute significantly to the improved organization of demand and supply. It would be necessary to carry out diagnoses of developing countries' development plans and policies, their industrial structure and training capacity in relation to the specific levels of technological and

managerial complexity utilized by industry. Simultaneously, diagnoses would have to be undertaken on the capacity of other developing countries to meet these specific needs. Such an approach to international co-operation, involving the simultaneous diagnosis of supply and demand, would ensure their correspondence to each other.

38. Furthermore, it should be noted that these regional centres have recently initiated co-operation at the interregional level. Co-operation between CINTERFOR and CIADFOR is intended to establish a broad technical co-operation programme covering: the transfer of experience in teaching methods; exchange of experience on vocational training, administration and management; convening of technical workshops on vocational training system, training of trainers, the financing of training etc. CINTERFOR has also initiated recently a programme of co-operation with ARSDEP which includes the setting-up of a documentation centre, and the adaptation and application of the teaching materials developed by CINTERFOR for Asian countries. It is hoped that co-operation at the interregional level will be extended to cover the organization of information on supply in relation to the demand from other countries.

39. In addition to these regional centres, however, co-operation between developing countries can be developed along the same lines through the activities of national technological and training institutions with international training objectives which have the capacity to assess the needs of other developing countries and to train people from those countries in the levels of technological and managerial skills required by different industrial sectors (see also Issue 3).

40. Management training has developed considerably over the last ten to fifteen years, not only in the economically and technologically more advanced countries, but also in the other developing countries. However, all possibilities for establishing good quality training programmes for industrial managers are far from being utilized. This problem could be overcome by improving the organization of supply and demand for management training with due regard to the managerial techniques required by different sectors of industry and more particularly to the level of complexity of these managerial techniques; a study on this subject is being carried out by UNIDO in relation to the iron and steel industry.

41. It is necessary that developing countries improve the formulation of policies designed to encourage and facilitate the training of managers in line with the specific needs of industry. Investigations have shown that the contribution of faculties and colleges of engineering to training in production engineering and plant management and to the development of industrial managers at large is unsatisfactory, and the young engineers and technicians are ill-prepared for supervisory and management functions that many of them will have to assume soon after graduation. In addition, management courses and seminars are arranged ad hoc in a fragmentary manner, and individual managers are involved in various programmes without pursuing clear career objectives or selecting programmes that address priority issues faced by the enterprises that employ them.

42. Although the organization of supply and demand along the lines described in the above paragraphs will promote increased co-operation among developing countries in management training, it should not be seen as a principal way of providing such training for industry. Training in other countries should focus on selected branches and subject areas; basic and general management training, as well as the bulk of training in the main functional areas of industrial management, need to be organized chiefly within each country. Very small and poor countries may constitute an exception: in a greater number of cases than hitherto it might be desirable for them to pool their resources and establish joint training facilities, for example, within the framework of sub-regional economic groupings and, if appropriate, in collaboration with the above-mentioned regional centres.

43. An additional important basis for co-operation among developing countries would be the mutual recognition of training standards being used in developing countries. The work being already undertaken by ILO and UNESCO, as well as by ARSDEP, CIADFOP and CINTERFOR, on the harmonization and comparison of education and training standards could be usefully strengthened. A further step should be the mutual recognition of standards on a bilateral, sub-regional, regional or interregional level.

44. The financing of training also needs to be given special attention. A review of the policies adopted by regional development banks, for example, has shown that increased attention could be paid to the financing of industrial training whether it is linked or not to the sale of plant and equipment.

Bearing in mind that the existence of trained technicians, managers and engineers is an important criterion in a commercial bank's decision to finance an industrial project, regional development banks should accordingly give top priority to loans for this purpose. Furthermore, it would be necessary in particular to finance studies to carry out a diagnosis of recipient countries' training needs.

45. Finally, co-operation between developing countries may benefit from the conclusion of long-term arrangements at the government level, bilaterally or multilaterally (at the sub-national, regional or interregional levels), for the development of human resources. Such long-term arrangements could, for example, cover the following:

- (a) The exchange and co-ordination of information on the long-term training needs and the training capacities available in each country or region, on the basis of national long-term programming of industrial manpower;
- (b) The mutual recognition of education and training standards being used in developing countries;
- (c) Programmes of co-operation in training related to selected priority sectors of industry and specific categories of personnel.

Points for discussion

46. The Global Preparatory Meeting may wish to decide that the following be submitted to the Consultation on the Training of Industrial Manpower:

- (a) The organization of information on the existing supply of training in developing countries corresponding to the demand of other developing countries (paras.36-42);
- (b) The mutual recognition amongst developing countries of education and training standards (para.43);
- (c) The mobilization of financial resources to cover co-operation in training industrial manpower at the enterprise and government level between developing countries (para.44);
- (d) The desirability and content of long-term arrangements (para.45).

ISSUE 3: THE POTENTIAL ROLE OF INTERNATIONAL ORGANIZATIONS AND OF
NATIONAL INSTITUTIONS WITH INTERNATIONAL
TRAINING OBJECTIVES

47. The question raised here is: to what extent and how can international organizations and national institutions with international training objectives be of assistance to developing countries, particularly bearing in mind the new dimensions of the problem as set in the Lima Declaration and Plan of Action? With few exceptions, these organizations and institutions neither have nor develop technological know-how and skills themselves; they do, however, have the capacity to assist developing countries in the long-term programming of the development of human resources required by their industrialization process. In order to ensure that the interrelationships between education, training and industrialization are fully understood, UNESCO, ILO and UNIDO should improve the co-ordination of their studies and assistance programmes.

Activities in the organization of demand and supply

48. International organizations and national institutions do have the capacity to develop new concepts and approaches to training, to assess training needs, to develop and innovate on training methods for specific categories of personnel (see Issue 1), to establish contacts with those who develop technological know-how and skills, and to advise on the scope and content of co-operation arrangements between suppliers and purchasers of training. In order that this capacity be fully utilized, these organizations and institutions should orient their activities towards the improvement of the organization of demand and supply along the lines described in paragraphs 14-20 (Issue 1). This would constitute a significant contribution towards rendering the world market for training better informed and increasing the decision-making capacity of developing countries.

Activities to promote co-operation between developing countries

49. While the above paragraphs on the organization of information on supply and demand relate equally to co-operation between developing countries with regard to the comparison of standards of education and training institutions in developing countries (see Issue 2, para.42), a considerable activity has been undertaken, notably by ILO and UNESCO, often on a regional basis. This has included the promotion of the mutual recognition of the education and training programmes of developing countries. Such mutual recognition of foreign programmes would constitute an important step in encouraging and facilitating co-operation amongst them; in this way a trainee will be able to return to his home country with a diploma recognized therein.

Activities on the training of technicians

50. The activities of international organizations and of national institutions with international objectives should also focus on the immediate needs of enterprises for production, maintenance and management purposes, in addition to the long-term requirements of the industrial sector as a whole. Technician training should not be considered to be a permanent activity at the headquarters of these institutions; in the long run, technician training should be carried out within the developing country, if need be by first creating the necessary institutional infrastructure. In the short run, only two situations justify the training of technicians abroad: where the required institutional infrastructure does not exist, and where the technology and related skills can only be obtained abroad.

Activities on the training of trainers

51. Assistance in this area should be given renewed priority. The training of trainers is required to enable developing countries to improve their decision-making capacity and should be made available with the following areas of specialization:

- (a) Teaching staff;
- (b) Personnel responsible for the organization of industrial training;

(c) Managers of training programmes;

(d) Training concepts, i.e. personnel with the capacity to innovate in response to new needs.

The training of trainers should primarily and above all be undertaken by those who are working in industry and are competent in these areas of specialization. For this reason, training institutions and international organizations need to maintain close links with industry in order to secure the link between technological and pedagogical know-how. In this connection, it should be borne in mind that industrialists who are capable of training trainers are in general available only in the developed and in some of the more advanced developing countries.

Activities on management training for industry

52. The activities on the organization of demand and supply should include that of information on management training. In addition, however, the following activities should be given renewed priority.

(a) Analytical studies, surveys of needs, programme assessment, and the definition of effective policies on management training for industry;

(b) Establishment of programmes of co-operation between various organizations and institutions with competence in the area of management training in order to overcome the fragmented approach and inconsistencies prevailing today;

(c) Support to regional and national training efforts through the production of model curricula, modular training materials, training of trainers etc. to help institutions in defining their optimum layout, organization and work methods, and in financing management training.

Activities designed to complement international co-operation at the enterprise level

53. As discussed in Issue 1, exporting enterprises generally are not in a position to provide training of industrial manpower at all levels and, in order to bridge the gaps, they need to obtain institutional support either from national training institutions of the developed country or alternatively from the facilities of international organizations. For

developing countries, complementarity between commercial and multilateral co-operation would present an advantage in that the buyer would be able to obtain full training and become progressively autonomous in relation to foreign suppliers.

54. It is suggested that, if requested, advice be provided by these organizations and institutions in the preparation of commercial co-operation arrangements in order to help to determine the nature and scope of contractual relations in the field of training industrial manpower. The demand from developing countries for their advice should, in this way, diminish through time, and enterprises should gradually build up their own decision-making capacity on the selection and purchase of the required training programme.

Points for discussion

55. The Global Preparatory Meeting may wish to decide that the Consultation on the Training of Industrial Manpower consider the role of international organizations and of national training institutions with international training objectives in the following areas:

(a) The organization of information on the existing training capacity in the developed and developing countries corresponding to the demand from other developing countries (paras.48-49);

(b) The long-term programming of the development of human resources, taking fully into account the interrelationships between education, training and industry; the development of new approaches to training of various categories of personnel required by industry in line with the target set by the Lima Declaration and Plan of Action (paras50-52);

(c) Long-term forms of international industrial co-operation arrangements for the acquisition of industrial skills (para.47).

