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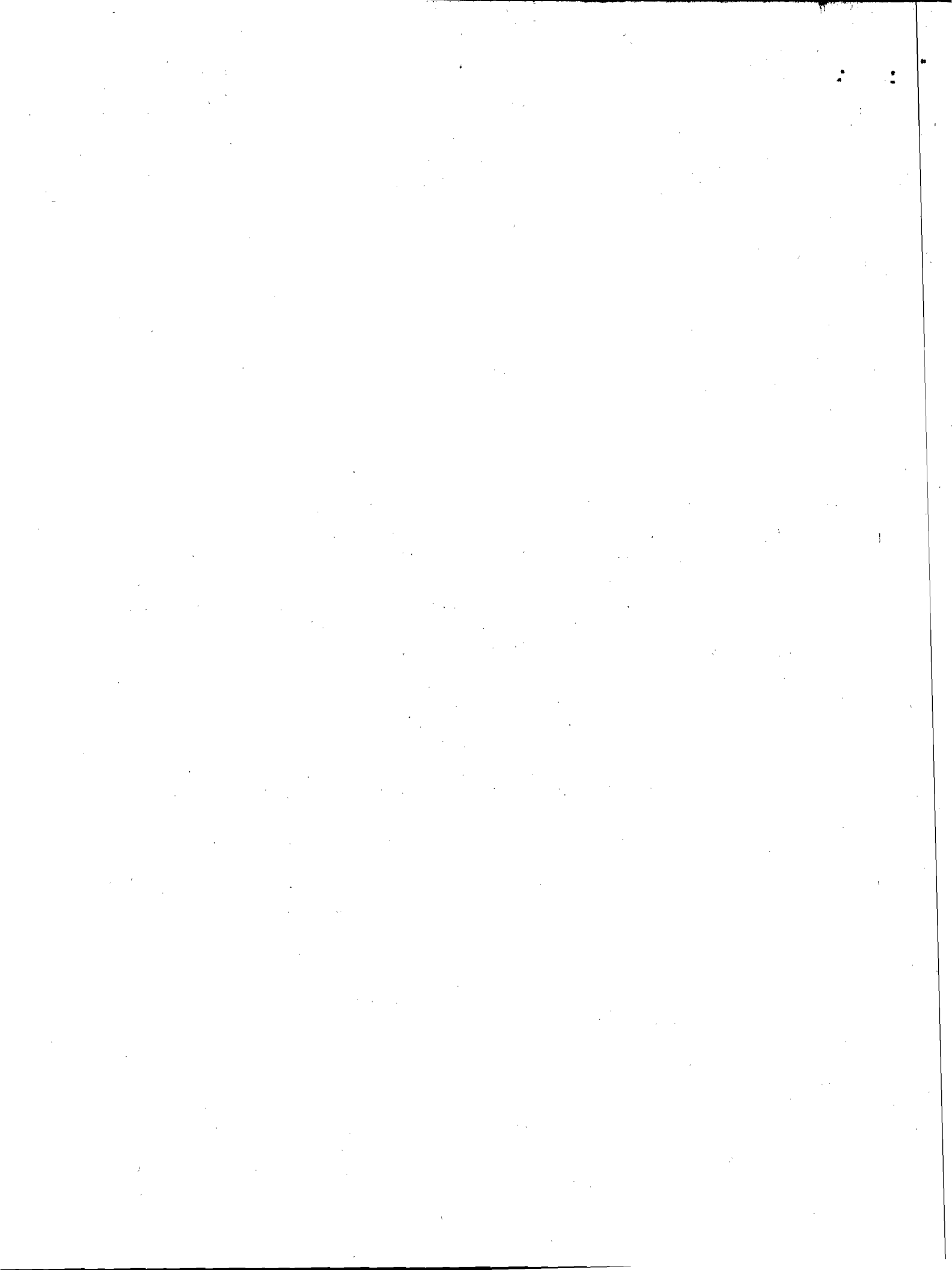
MEETING ON SCIENCE, TECHNOLOGY AND
DEVELOPMENT IN LATIN AMERICA

México D.F., 2-7 December 1974

PROVISIONAL PROGRAMME

1. Science and technology in the development of Latin America
Documents: - ACAST, "A Latin American plan of action for the application of science and technology to development" ^{1/}
- "Technical progress and socio-economic development in Latin America: a general analysis and recommendations for technological policy" (ST/CEPAL/Conf.53/L.2)
2. Application of the Regional Plan of Action
Documents: - "Scientific and technical progress for the development of Latin America" (ST/CEPAL/Conf.53/L.3), prepared by the Latin American Institute for Economic and Social Planning (ILPES)
- Documents submitted by delegations and statements by Government representatives on national implementation of the Plan
3. Latin American experience in the programming of science, technology and development
Documents: - "Some recent experience in the promotion of scientific and technological development in Latin America" (ST/CEPAL/Conf.53/L.4)
- Documents submitted by delegations and regional agencies
4. System of intergovernmental consultation for the implementation of the Regional Plan of Action and utilization of existing machinery at the Latin American level
5. Immediate tasks of the ECLA secretariat and other regional and international agencies

^{1/} The English version of this document, which was presented to the fifteenth session of ECLA (Quito, April 1973), is being distributed to the Meeting under its original code number: E/CN.12/966. The Spanish text is available in the form of a book published by the Fondo de Cultura Económica (Mexico City, 1973).



Notes on the provisional programme

1. Science and technology in the development
of Latin America

The problem of technological progress has been one of the main concerns of what is generally called the ECLA philosophy. Even in its earliest documents, the secretariat called attention to the fact that technical progress has spread only slowly and irregularly from the countries where it originated to the rest of the world. The analysis of science and technology should not be divorced from the overall context and the functioning and relations of the centre-periphery system. This approach must be reformulated in the light of the important changes taking place in the Latin American countries, particularly the more developed economies. First, there is visible evidence of the spread of technical progress in all sectors, especially in industry. Secondly, although in the initial stage the change was within the framework of the national market and without great participation of foreign capital, the role of foreign investment has increased and has become of primary importance in the diversification of the productive system, particularly in the more dynamic industrial activities and their supporting services.

There is thus a need for a critical reappraisal of the new situation. Concern with the intensity, quality and terms of the transfer of technical progress, and the clearly unsatisfactory state of affairs with regard to national or regional creation or adaptation of science and technology are evidence of the fact that the changes fall short of satisfying Latin American aspirations in this respect.

Of prime concern here is the scope and tendency of this new phase in the spread of technical progress, as well as the social implications. Doubts have increased with respect to the capacity of the process to extend to the entire economy and thereby introduce an integrated and relatively homogeneous system incorporating the mass of the population who are at present lagging behind.

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Faced with this situation, there are two opposing points of view. On the one hand, there are those who maintain that the restricted spread of technical progress and its benefits does nothing to help to establish a homogeneous system, to broaden social participation, and, above all, to remedy the critical poverty of large segments of the population. On the other hand, there are those who think that the solution to the problem depends basically on steady and thorough growth, and affirm that, provided such growth can be maintained at sufficiently high rates and for a sufficiently long period, the desired objectives will be attained in the end, as they were in the central economies.

In this kind of analysis, decisive answers are difficult because they depend on the validity of forecasts of future trends. The available information does, however, permit the investigation of prospects and reasonable alternatives, at least for Latin America as a whole.

The view that technology will resolve, or be a key factor in resolving, the problems of the world has been increasingly challenged. One of the main reasons for suspicion is its relationship with the destructive arts of war, but there are also other reasons, such as repercussions on the environment and the quality of life, the distortions of an "economy of waste", and the pessimistic prospect of a future cybernetic society. These views have naturally mainly been prevalent in the industrialized economies, but it is clear that countries such as ours are affected as well.

The fundamental issue is for what, for whom and how the potential for technical progress should be employed and mobilized. Once this issue is settled, the various technological policy alternatives would be quite clear. So long as the style of development remains the same, they should be adjusted to it and fulfil the tasks set as efficiently as possible. If, on the other hand, it is intended to operate in another manner and in terms of other objectives, then these new objectives must be expressed in a new economic and social strategy.

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However, technological progress is not a dependent or passive variable: there are reciprocal influences between the style of development and the technology used to implement it. There is increasing concern in Latin America over problems that have either not been resolved or have actually been created by the dominant style of development. This is apparent from public statements, action plans, and so on.

The centripetal forces encouraging the concentration of technical progress and of its benefits must be replaced by a sustained incentive to spread such progress and benefits outwards, with a view to making the productive system more homogeneous, reducing the disequilibria between regions and between the urban and rural areas, improving internal integration, establishing new, less precarious and more fruitful external relationships and, finally and above all, achieving a better distribution of income.

This being so, it is obvious that - whatever views or forecasts regarding future action are adopted - technological policy must not wait passively for the complete definition of a new approach to development but must start establishing the basis of its own reorganization without delay.

For this, it is essential to make a critical analysis of certain fashionable attitudes in Latin America. Chapter I of document ST/CEPAL/Conf.53/L.2 attempts to do this. It is also essential to give a broad outline of the options open for the future, according to the style of development adopted by the region. This is dealt with in Chapter II. Finally, a rough outline is needed of a technological policy that reflects the hoped-for new directions and responsibilities. An attempt at such an outline will be found in Chapter III.

2. Application of the Regional Plan of Action

The document entitled "Scientific and technical progress for the development of Latin America" (ST/CEPAL/Conf.53/L.3), prepared by ILPES, is intended to provide an integrated view of the problems of science and technology in terms of the process of development and to identify the specific measures, machinery and instruments that are required at the national and regional levels to ensure the more harmonious development of science and technology in the context of a unified approach to development, in order thereby to give effective form to the recommendations of ACAST and, in general, to the policies being formulated in Latin American countries. The analysis therefore concentrates on the process of technological change. All the factors requiring study are thus considered in the light of their repercussions on this process, which, from the standpoint of economic and social development, is the element whose examination and appraisal is of most direct interest.

These aspects are, of course, dealt with from the standpoint of the region as a whole. Inevitably, however, the heterogeneity of the countries is such that it is impossible to formulate policies that are generally applicable to all of Latin America. Objectives that may be easy to achieve within two or three years in one country, for example, may require several decades in the less developed nations or be altogether impossible in the smallest countries. The smaller the volume of resources available, the greater is the need to concentrate efforts - at least in the initial stage - on the attainment of a small number of specific targets in order to make the best possible use of those resources.

The foregoing also illustrates the decisive importance of intra-regional co-operation (i.e., the association of countries that cannot resolve certain problems on their own) and the need for collaboration of the relatively more developed Latin American countries with the less favoured nations in order to prevent the gaps that separate Latin America from the industrialized world from repeating themselves in similar or even more acute form within the region.

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In other words, the ILPES study recognizes the diversity and consequent individuality of the development strategies and policies of Latin American countries and attempts to adjust the analysis and relevant recommendations to this fact. At the same time, however, there are also a number of common objectives, and for the purposes of the document, special attention has been given to those of attaining a higher economic growth rate, improving the distribution of income, and increasing employment opportunities.

The study begins with an introductory chapter containing a number of preliminary observations, which summarizes the problems and obstacles of technical progress in Latin America and offers a general picture of future prospects. The two following chapters form the main body of the work in that they analyse technological change from the standpoint of the institutional agents and of the phases or stages of the process, respectively. Chapter IV examines the action of international agencies. Chapter V discusses the preliminary conditions, complementary action, orders of priority and operational machinery needed for the application of the ACAST Plan, in the light of the considerations contained in earlier chapters. Finally, the concluding chapter attempts a brief summary of the whole.

3. Latin American experience in the programming of science, technology and development

The document entitled "Some recent experience in the promotion of scientific and technological development in Latin America" (ST/CEPAL/Conf.53/L.4) reviews the scientific and technological institutions and policies on the basis of information obtained through direct contacts with various national agencies.

The document is in four parts. The first examines in broad terms the origins and manifestations of the scientific and technological shortcomings of Latin America as a whole and indicates the steps that Governments have taken to remedy the situation. Chapters II and III analyse the evolution and performance of various scientific and technological policy instruments. The study concludes

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with an evaluation of experience in the region, pointing out that the development of scientific and technical activities could lead to a complete revision of the patterns of development followed so far.

In recent years, Latin America has shown an increasing interest in science and technology in the context of development. This has been manifested in various ways. One of these is the growing number of studies which, from various angles, tackle the problems that are inherent in the region's shortage of scientific and technical know-how. The studies have paid particular attention to several aspects: (a) the nature and the evolution of the economic and educational structure from which the present unsatisfactory situation is thought to originate; (b) the part played by the region's backwardness in the present structure of the labour market; (c) the determining factors in the region's limited capacity for selecting and applying useful know-how developed in the major industrialized centres; (d) the ways in which techniques are disseminated and marketed and their effect on the balance of payments and, above all, on the distribution of income; (e) the benefits to be derived from the channelling of regional co-operation towards shared scientific and technical development.

In addition, governments have taken various initiatives to encourage scientific and technical development. In some cases, progress has been significant; elsewhere, the countries are still taking their first steps in this matter.

The second part of the document describes the experience of institutions in some of the larger countries of the region and in Central America and draws attention to the achievements and limitations of the National Councils, which can serve as a useful starting point.

The third part of the document examines the subregional and national technological policy instruments that have been adopted in respect of the transfer, marketing and registration of technology.

4. System of intergovernmental consultation for the implementation of the Regional Plan of Action and utilization of existing machinery at the Latin American level

The meeting on Science, Technology and Development in Latin America convened by ECLA for the period 2 to 7 December 1974, in Mexico, pursuant to resolution 322 (XV) of the Commission, in particular its operative paragraph 2, will make it possible to initiate the intergovernmental review of the Regional Plan for the Application of Science and Technology to Development and to examine "the manner of implementation of the Regional Plan and the possibility of co-ordinating the Plan with other regional programmes being carried out by other international organizations and with the programmes and policies of the region". In addition to providing the member countries with an opportunity of expressing their positions in this connexion, it should be borne in mind that in operative paragraph 4 of the same resolution of the Commission the participating countries are requested "taking into account the progress of similar initiatives in the region, to express their views at that meeting concerning the advisability of establishing a committee or some other intergovernmental machinery in ECLA to analyse the application of science and technology to the development of Latin America". Furthermore, chapters 4 and 5 of the study entitled "Scientific and technical progress for the development of Latin America", prepared by ILPES, contains some suggestions as to concrete action that could be envisaged in the field of science and technology with the technical and financial assistance of the United Nations family, particularly the United Nations Development Programme (UNDP). This study deals with the need to define machinery which would permit the identification of priority fields for regional co-operation and, particularly, for the application of the ACAST Regional Plan. For this reason, and with the aim of ensuring the co-ordination of international action with the strategies defined for each country, the form and content of the programmes to be prepared are suggested.

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5. Immediate tasks of the ECLA secretariat and other regional and international agencies

In its resolution 308 (XIV) ECLA took note of the decision taken by the Economic and Social Council in its resolution 1155 (XLI) to the effect that the Advisory Committee on the Application of Science and Technology to Development should prepare a World Plan of Action in that field, and recalled that in resolution 2318 (XXII) the General Assembly has endorsed that decision and requested the Committee to "consider carefully the regional aspects of such a plan and to seek for that purpose, the co-operation of the regional economic commissions". The resolution further requested the ECLA secretariat to "devise measures for establishing the necessary organizational procedures for carrying out the mandate entrusted to it by the General Assembly, and to give special attention in its programme of work to the study of technology and the promotion of its application as a means of accelerating economic development in the region and facilitating its transfer to the developing countries". At the same time the Commission recommended that the secretariat, in carrying out this work, "should co-ordinate its activities with those of the specialized and other agencies of the United Nations systems, and with the competent organizations of the Inter-American system".

In carrying out this mandate, the secretariat reorganized the activities already being implemented in this field under its Work Programme, broadening it with special reference to the transfer, adaptation and development of technology in the industrial sector. These activities were directed to determining the present situation and the problems of the transfer, adoption and development of industrial technology in the Latin American countries by means of a selective sector-by-sector study by group of countries, with a view to filling the gaps in available information, particularly with respect to special measures which could be applied as part of an integrated industrial development policy aimed at accelerating technological progress.

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For that purpose a range of industrial sectors and groups of countries of the region were chosen in which the relevant studies will be carried out gradually, with a view to publishing the first studies in 1975.

It should be stressed that as a result of the recent agreement reached with the Inter-American Development Bank (IDB) in this connexion, a joint programme of work, covering a period of three years, has been established, under which activities in this field, to which both organizations attach special importance, will be intensified.

Of course, depending on the conclusions and recommendations adopted by the Member Governments of the Commission at the meeting on Science, Technology and the Development in Latin America, in Mexico, the pertinent adjustments will be made in the secretariat's Work Programme.

