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Industrial Development

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PROVISIONAL ANNOTATED AGENDA AND PROVISIONAL LIST OF DOCUMENTS

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FOREWORD

The purpose of the Latin American Symposium on Industrial Development is to study the existing situation and problems, and future prospects, as regards industrial development, both for the region as a whole and for the individual Latin American countries, and to consider any measures and policies that might accelerate this development in each country, or that might relate to regional and international co-operation. The study of these subjects will permit an exchange of views that should be of great interest to the participating countries.

In view of the extensive field represented by industrial development, which is reflected in the length of the provisional agenda, it will be advisable to focus the discussions on a limited number of specific subjects, in order to encourage more thorough discussion. To facilitate the guidance of the debates on these lines an annotated agenda has been drawn up, which is set forth in section B of the present document. It includes brief comments on the main problems and obstacles that have hampered industrialization in the Latin American countries, and on the prospects for industrial development in the region. In brief, the aim will not be to touch on or debate fully during the meetings all the problems relating to each item on the agenda, but merely to indicate those points that appear to be particularly significant at the present stage of Latin America's industrial development.

The annotated agenda is followed by a list of the documents that will be presented at the symposium. In view of their considerable length two of these, The process of industrial development in Latin America (ST/ECLA/Conf.23/L.2, in three volumes and Los principales sectores de la industria latinoamericana: problemas y perspectivas (ST/ECLA/Conf.23/L.3), in two volumes, will constitute the two basic documents for discussion. The other documents, some of which are exclusively reference documents, are: the secretariat studies on industrial sectors or on specific problems relating to either the manufacturing sector as a whole or to particular industrial branches; documents submitted by the United Nations centre for Industrial Development, on certain general industrialization problems; national studies or reports prepared by the countries concerned, and some reports submitted by inter-American or international bodies.

Resolution 250 (XI) of 14 May 1965, adopted at the eleventh session of ECLA, requested the Latin American Governments "to prepare national studies on the present status of their respective industrialization processes for presentation at the regional symposium". The studies received contain a mass of background information and facts of great interest, that will make it possible to compare the experience of the various countries as regards particular problems.

The outline used for the preparation of the national reports, which is set forth in the annex to the present document, was drawn up by the secretariat with the aim of providing a guide to the officials concerned in each country, and to ensure some degree of uniformity in the presentation of the reports, as far as the particular circumstances of the country concerned permit.

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B. PROVISIONAL ANNOTATED AGENDA

I. EVALUATION OF INDUSTRIALIZATION IN LATIN AMERICA, AND FUTURE OUTLOOK

1. Latin American industry: past evolution and present characteristics

The industrial development of the Latin American countries has taken place against a background of rapid population growth, accelerated urbanization, very uneven income distribution and violent fluctuations in foreign trade. Certain stages can be recognized through which all these countries have passed, in varying degrees.

The differences that exist in the structure of production and in employment reflect the fact that some countries in Latin America are still at the stage of industrialization at which the typical industries developed are what are termed the traditional industries (food, beverages, textiles, etc.), whereas others have already completed this stage and are going on to establish the "dynamic" industries, which are more capital intensive and have higher technological requirements, and are associated with stricter requirements in terms of economies of scale.

This evolution, although it varies considerably from country to country in accordance with special circumstances or historical factors, appears always to be determined largely by the need for import substitution. This process, which had already begun in some countries before the Depression in the thirties, became a pressing necessity thereafter, and at the same time a dynamic factor that provided the main stimulus for the process of industrial development.

However, import substitution has shown signs of weakening in recent years in the traditional industries sector, and even, in some countries, in the industries producing intermediate and capital goods. Hence the dynamic effect it has had in earlier decades is diminishing, and new ways will have to be sought to stimulate future development. This change has varied, of course, in degree and form, according to the individual circumstances of the various countries, which in Latin America cover a

/wide range.

wide range. Nevertheless, as a result of the industrialization process, the Latin American countries have reached a stage when, despite individual differences, they have some features in common.

The factory sector of industry,^{1/} for example, accounts for a relatively small percentage of the total industrial labour force, ranging from one-fifth in some countries to slightly over a half in others. The labour force is generally inadequately trained, and the wage levels are relatively low; so are average productivity, and the share of wages and salaries in the industrial value added.

The use of industrial capital in general is inefficient, and a substantial percentage of installed capacity is not fully utilized. In addition the formation of new fixed capital is slow, because of the general scarcity of funds, and also partly because the conditions prevailing in most of the Latin American countries result in working capital needs being much higher than in the developed countries; in addition some enterprises make non-industrial use of working capital.

Furthermore, there is an excessive diversification of production in the individual enterprises, leading to insufficient specialization. There are also great differences in the productivity of the factors of production, other conditions being equal, between individual enterprises, between sectors, and between industrial size categories. In addition there is an insufficient degree of integration in the industrial complex as a whole, with imbalances between the various branches.

Again the levels of costs and prices are generally high, partly as a result of the factors listed above, but also because of problems relating to the scale of production, the use of technologies that are not always suitable, and infrastructural defects as regards transport and electric power. In some cases the high price of raw materials, whose production is often unsatisfactory in terms of technology, scale of production and location, is the main reason for the high cost of the manufactured products.

The high costs and prices, in turn, lead to a relatively low level of consumption of manufactures, and to serious difficulty in competing in foreign markets.

^{1/} This is defined here as including all industrial units that employ five or more workers.

Lastly the contribution of industrialization in creating new sources of employment has been shown to be inadequate in relation to the explosive growth of the labour force, due both to an inadequate growth rate of the industrial sector and to the adoption of production techniques that are not always those best suited to the facts of life in the Latin American countries.

Even when in certain industrial branches, or in certain countries, conditions are particularly favourable, the indicators referred to above seem to show that in general the Latin American countries have reached a stage at which industrialization must be strengthened and given a new direction.

It is important to determine how far individual experience, as it will no doubt be described during the course of the symposium, confirms, or indicates the need to correct, the evaluation of industrialization in Latin America contained in document ST/ECLA/Conf.23/L.2, as briefly summarized in the preceding paragraphs.

2. Industrialization policy and future prospects

The factors that have determined the past evolution and present characteristics of Latin American industry include policy measures relating to industrialization.

Although such measures have not had the continuity and consistency that would justify their being regarded as an industrial policy, their effect seems to have been particularly important in particular countries and at particular periods.

Of special importance, because of their powerful effect, are the measures to protect industry from external competition; not only have they permitted the industries created for import substitution purposes, during periods when supply was a problem, to continue to operate after the situation had returned to normal, but they have affected all subsequent industrial development.

Although ancillary to measures and instruments directed towards other ends, such as the collection of tax revenue or the stabilization of the external balance of payments, this protectionist policy has encouraged the

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expansion of existing industries and the establishment of a wide range of new ones. Admittedly alongside the favourable effects produced on employment and on the balance of payments, the perpetuation of high levels of protection and the frequent lack of flexibility in the application of these measures have sometimes kept domestic market prices disproportionately high, either for want of incentives to increase efficiency or because, in the narrower domestic markets, conditions have been created in which internal competition is limited or non-existent. At the same time, they have led in many cases to the manufacture of inferior-quality goods.

The protectionist measures are accompanied by provisions for the promotion of industrial development which are based essentially on tax and credit measures and are generally designed to encourage new investment or re-investment. In some countries, special industrial development legislation has been passed, but in most there are only scattered legal provisions, frequently of a general character, whose effects on industry are by-products deriving from the pursuit of other broader objectives. In some instances, again, the provisions in question, although their intention is specific, are incomplete, inasmuch as they relate to particular parts of the country or particular branches of industry.

The policy followed with respect to foreign firms operating in the industrial sector differs little from that applied to external investment in general, irrespective of the proportion such firms represent. These foreign companies seem to have concentrated their industrial investment - as distinct from investment in extractive and primary processing activities - in the countries that afford bigger markets. Similarly, their investment has often been effected in order to maintain markets which they had previously been supplying from abroad, and which they were in danger of losing in consequence of the Latin American countries' protectionist policy. Thus, the foreign industries established in the region have channelled their activities towards supplying the domestic market, and only in exceptional cases towards production for export.

Furthermore, account must be taken of the significant experience of some countries in respect of direct State promotion, either in the form of financial backing for private undertakings or through the creation of

/State enterprises

State enterprises to be maintained as such or else subsequently transferred to the private sector. The results of this type of action, as well as the patterns it follows, differ widely from one country to another. It often seems to be motivated by general economic and social development considerations, or directed towards basic industries that require relatively heavy investment and entail a high percentage of risk.

In face of the new demands of industrial development, the stock of experience acquired in relation to all these measures needs evaluating so that industrial policies in line with those demands can be adopted.

With regard to the future prospects of Latin American industry, it has already been pointed out that import substitution at the national level seems to have reached a stage beyond which it can hardly be carried, and is no longer the main source of dynamic impetus. Although its possibilities are not yet completely exhausted, and several countries of the region still import a wide range of products which they could produce at home, the size of the individual country markets is an important limiting factor, especially where costs are concerned. Hence it is that the economic integration of Latin America has become an indispensable requisite for the continuance of the import substitution process, at the regional level. This process, speeded up by the expansion of intra-regional trade and of exports to countries outside the region, could give Latin American industry the stimulus it needs at its present stage. Obviously, in such a change of programme, the gradual economic integration of the Latin American countries will necessarily acquire strategic importance.

Objectives like these generate new problems to be solved, which include, inter alia, those relating to the establishment of principles that will guarantee all participating countries access to the benefits of integration; to the changes in the internal structure of each country's industry which will have to accompany the acceleration of industrial development; and to the co-ordination of national industrial development programmes.

The re-orientation of Latin American industry will call for the lucid definition and co-ordinated, selective and continuing application of the set of measures that make up industrial policy. To this end, it
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will be necessary to clarify the basic aspects of over-all development strategy, some of which have already been indicated: for instance, how far the industrialization effort will still be geared to the domestic markets, and how far it will have to be readjusted with a view to regional integration and the world market for manufactured goods; how far industry is likely to maintain the trend towards extensive expansion, as against the possibility of aiming at fuller integration of its internal structure how far an attempt will be made to check the tendency towards over-concentration of industry in specific parts of each individual country; and, lastly, what responsibility will be incumbent upon industry in respect of long-term employment policy.

Once the basic objectives have been defined, it will be possible to specify the measures that will constitute future industrial policy, both at the national and at the regional level. The manipulation of the tax instrument, credit facilities, protectionist measures, ways and means of modernizing stock markets and making their operation more flexible, effective promotion of industrial exports, and State machinery for industrial promotion, for technological research and for the training of manpower, etc., will have to be evaluated and overhauled in order to permit the fresh approach and increased co-ordination upon which the further progress of Latin America's industrial development depends.

This topic is dealt with from the over-all standpoint in document ST/ECLA/Conf.23/L.2. The individual country studies contribute additional and more detailed background data in connexion with this important subject, which would warrant discussion of the experiences of the participating countries on a comparative basis.

3. Industrial development programming: institutions and instruments

The complexity of the industrial development process has underlined the need to seek the rationalization which planning affords in order to carry out drastic structural reforms and step up the rate of growth. It looks as though the difficulties and obstacles that are hampering the industrialization process - such as the dwindling of import substitution

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opportunities in the traditional industries in some countries, and even, in others, in the manufacture of certain intermediate products and capital goods; the high levels of costs and prices; the shortage of capital; the limitations of the market for manufactured goods, etc. - will compel Latin America to undertake planned action whereby they can be surmounted within reasonable periods of time and at reasonable social costs.

Most of the Latin American countries have adapted their policy to this situation, and have made significant progress in the field of both over-all and industrial planning. They have realized the need to establish authentic planning systems embodying all the instruments that will enable national or sectoral plans to be drawn up with due regard to the aspirations and adequate participation of the people as a whole, of private enterprise, and of different areas, and at the same time in conformity with the requirements determined by basic conceptions of over-all development. This presupposes the creation of a two-way planning system, which on the one hand will take up and channel the wishes and aims of the various sectors in the country concerned, and, on the other, will guide their activities along such lines as will serve the nation's economic and social development needs and interests. Moreover, it implies the establishment of machinery to facilitate or ensure attainment of the targets and proper application of the policies incorporated in plans and programmes. In other words the administrative organization of a planning system must be efficient enough to promote planning activities at all levels, not only those involved in the formulation of the plans, but also those pertaining to their implementation, execution and supervision.

Industrial planning should be considered in integrated terms, that is, with reference to the whole of the manufacturing sector, in the context of over-all planning. If the approach adopted were confined to specific industries, successes might perhaps be achieved, but failure to make allowance for the determinants and limiting factors operating in the general economic and social environment might expose the country's over-all development to the risk of unfavourable repercussions. This does not of course imply depreciation of the significant results which programming in

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certain isolated industrial sectors brought about in some Latin American countries in the past, when the pre-requisites for over-all planning were not yet present.

Again, industrial planning should give due consideration to the fact that in almost all the Latin American countries the brunt of the material responsibility for industrial investment and production is borne by private enterprise, and should draw all the conclusion deriving therefrom. In this connexion, the problems arising include the question of the instruments of over-all economic policy that will effectively induce the private investor to relate his decisions to specific social targets, and will encourage the adoption, under national or regional programmes, of those production techniques and processes which are the most appropriate from the standpoint of the community as a whole.

In most of the Latin American countries, planning started during the forties, generally with the formulation of programmes for specific basic sectors, especially in the industrial field. Both for drawing up and for executing the programmes, agencies were established whose activities were limited to specific lines of action.

By 1965, long- and medium-term industrial development plans of a general type, incorporated in an over-all model, had been formulated in the majority of the Latin American countries. Except in Cuba's case, the essential features of these plans conform to the guiding principles laid down in the Charter of Punta del Este; analysis and projection techniques are based as a rule on the methodology disseminated by ECLA; in scarcely any instance are measures of economic and social policy established in sufficient detail; the incorporation of specific projects in investment plans is rare; importance is attached to planning for particular areas at the national level in only a very few cases; and, lastly the framework offered by the economic integration of Latin America is very seldom taken into account.

The foregoing observations suggest that countless aspects of this subject would be worth thorough discussion, such as those relating to the administrative organization of a national planning system; the level of

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the planning unit, the machinery for the implementation of plans; the improvement of basic statistics; instruments for the promotion of development; the formulation of industrial programmes with due regard to the Latin American integration movement; and so on. Nevertheless, in view of the nature and the duration of the Symposium, it might be advisable to confine discussion to certain points whose elucidation and definition might contribute most to the improvement of substantive aspects of planning, such as, for example, the part to be played by the private sector in industrial planning, and the relations between the agencies that formulate industrial programmes, those that promote and execute them, and those that manipulate the various instruments of industrial policy.

II. PRESENT SITUATION, PROBLEMS AND PROSPECTS OF THE MAIN INDUSTRIAL SECTORS

For the purposes of briefly analysing the present situation of the main industrial sectors, their future development prospects and the problems hampering or conditioning their expansion, the secretariat deems it advisable (if the composition of the delegations so permits) to set up working groups, one for each of the industries to be discussed. These groups, whose meetings would be held concurrently and would cover two full days, would adopt an over-all approach to the prospects and problems in question, with reference to the following branches of industry: basic metal (steel and aluminium), chemical products, pulp and paper, metal transforming and textiles. The meetings of the working group on the pulp and paper industry would coincide with the beginning of a series of ECLA/FAO/BTAO consultative and technical meetings, to be held at the same time as the Latin American Symposium on Industrial Development and within its framework.^{2/}

The task of the five sectoral working groups would be to examine in outline the findings of the sectoral studies carried out by ECLA, in ~~co-operation with the Latin American Institute for Economical and Social~~ Development Planning and the Inter-American Development Bank, during the last eighteen months,^{3/} together with those of some individual studies, more recently completed, the titles of which will be found in the provisional list of documents.

The primary concern of all these studies is to consider the present situation of the various sectors in each individual country, their respective prospects of modernization and dynamic development, and the opportunities and benefits that would derive from regional integration in each case. They also discuss, on the basis of copious background data, such matters as operational efficiency and economies of scale,

^{2/} The provisional agenda for this series of meetings, and other relevant information, will be distributed separately.

^{3/} See ST/ECLA/Conf.23/L.3.

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which are of vital importance for the definition of the far-reaching possibilities opened up by the economical integration of the Latin American countries.

The detailed analysis to be made by the five working groups would not only furnish information on the objective situation and prospects of each sector, both at the national and at the regional level, but might contribute much of the background material required for establishing the essential features of Latin America's future industrial policy. Over-all development strategy, too, would have to be constantly borne in mind in the discussion of the several sectors.

With the sole aim of facilitating evaluation of the problems and conditions existing in each individual sector, by laying down, as far as possible, uniform guidelines for the discussions of the working groups, it is suggested that attention should be concentrated on the following topics:

(a) A cursory review of the over-all supply and demand situation, for the purpose of defining the degree of self-sufficiency achieved by Latin America and projecting future trends in this respect, with special reference to the medium- and long-term prospects afforded by regional integration;

(b) A brief analysis of the situation as regards the natural or basic resources available for the expansion of production, and of growth problems in the industrial sector concerned, with due regard to the desirability of intensifying regional specialization in future development efforts;

(c) A condensed appraisal of comparative levels of operational efficiency in industry in the different countries of the region - with reference to both capital utilization and labour productivity -, which may determine, in important respects, the promotional action needed and the integration patterns to be adopted.

Obviously, this proposed list of topics will be subject to modification in accordance with each sector's individual situation and requirements.

I. Basic metals industry

(a) Iron and steel

Consumption of rolled steel products in Latin America has doubled in the last ten years, its upward trend being much more marked in countries possessing a domestic steel industry than in those which have not yet entered this field of production. Despite this significant increase, average per capita consumption in the region is less than half the corresponding world figure. ECLA projections indicate that the present volume of consumption of rolled steel products will have been more than doubled by 1975 and almost trebled by 1980.

Since most Latin American countries' capacity to import is limited, and no major changes are likely to take place in this respect, the only way to meet requirements in respect of rolled steel products will be by means of a considerable expansion of domestic production, which at the present time satisfies three-fourths of total consumer demand. In order to achieve so substantial an increase, the Latin American countries will have to exert themselves to the utmost, in the course of the next ten years, to muster financial resources and assimilate new technologies.

~~If the effort made in both directions is to prove worth while, this~~
noteworthy expansion of the iron and steel industry will have to take place in more favourable conditions than in the past as regards market sizes and, consequently, scales of production, degrees of specialization, and costs levels.

Save in exceptional cases, the prices of steel products manufactured in Latin America are very high, and most companies operate under the protection of heavy tariff duties, as is shown in the documents presented at the Symposium.^{4/} This state of affairs tends to limit steel consumption in the region, and stems chiefly from the unfavourable costs situation.

The most important causes of high production costs in Latin America would appear to derive from the incompleteness of the plant where mill projects provide for construction by stages; from failure to apply the latest technical innovations; from diseconomies of scale in unduly small

^{4/} See ST/ECLA/Conf.23/L.29, and ST/ECLA/Conf.23/L.3, chapter I.

/mills, particularly

mills, particularly in the manufacture of flat rolled products; from over-diversification of output; and from the lack of adequately trained personnel.

The factors which do most to keep down both production costs and investment in the iron and steel industry are, firstly, economies of scale, and, secondly, specialization, that is, installation of the equipment required for economically manufacturing a limited range of products, with due regard to the raw-materials situation and inventory costs. This emphasizes the importance attaching to the size of the market which the mill is to serve. The industry will be able to establish itself on a sound economic footing if a sufficient degree of specialization is achieved; but this may depend upon the discovery of some pattern of integration or complementarity with other countries, which will offset disadvantages relating to economies of scale. But even countries whose markets are big enough for them to develop their industry on their own account would benefit by integration. Not only would it enable them to dispose of temporary production surpluses, if, as is desirable, future mill projects envisage operation at full capacity from the outset rather than construction by stages, with over-investment in certain sections, as has been the common practice up to now; it would also allow them to share in the advantages of specialization on more ambitious lines.

In the recent past, the steel mills of Latin America have not been operating at the capacity for which they were originally designed, but, in the case of integrated mills, at only about 50 per cent on an average (in relation to the region as a whole). This under-utilization of projected capacity, and the consequent low productivity of the capital invested, is chiefly due to the marked lack of balance between production capacities in the various phases of the manufacturing process; particularly noteworthy are the deficits existing at the ore reduction stage and, although to a lesser extent, in the steel works. At the same time, surplus installed capacity is generally to be found in the rolling mills. These deficiencies are the outcome of the import substitution policy, applied within the narrow confines of domestic markets, which many Latin American countries were obliged to pursue in the past, and they can only be completely

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remedied by means of the integration of those markets on a regional basis. There are some instances, however, in which all that is needed to correct the imbalances in question is the introduction of more up-to-date techniques and operational improvements, or the installation of certain additional equipment. In both cases, production costs and average investment per ton of output would be reduced.

Development on these lines (technological improvements and expansions to secure balanced capacity) is of course in full swing in a large number of Latin American mills. But a universal effort of this kind would have to be made within a framework in which the limiting effects of the separate domestic markets would be lessened or eliminated altogether, and this would be the object of regional integration in the field of steel making. It must also be borne in mind that the financing problems which the mills will have to face in order to implement their expansion programmes might be more easily solved on a basis of regional co-operation.

(b) Aluminium

Although consumption of primary aluminium has increased rather more than three times over in Latin America as a whole during the past ten years, per capita consumption levels are still far lower than in the developed countries. The consumption registered in four countries - Argentina, Brazil, Mexico and Venezuela - accounts for about four-fifths of total consumption in the region.^{5/} Projections of demand suggest that sharply rising trends will be maintained over the next few years.

Latin America is so abundantly endowed with the energy and raw material resources needed for the successful expansion of aluminium production that several countries in the region could develop this industry on economic bases sound enough for them to achieve price levels similar to those prevailing in the domestic markets of the highly industrialized nations.

Latin America's share in world production of bauxite has been about 50 per cent, and slightly over 40 per cent of world reserves of bauxite are found in this region, three-fourths of them in two countries - Brazil

^{5/} See ST/ECLA/Conf.23/L.3, chapter II.

and Jamaica. In most of the other countries there are plentiful deposits of alunite and clay, whose economic exploitation is currently the object of a major technological research effort.

In the light of the over-all Latin American demand projected for 1965, and on the assumption that the development of the industry will be planned with a view to regional integration, the conclusion may be reached that several plants of economic capacity could be installed, which would not be affected by any significant diseconomies of scale.^{6/}

2. Chemical industry

Except in Mexico, the development of the chemical industry in Latin America during recent years has not greatly outstripped that of the industrial sector in general, whereas in other more advanced countries the corresponding ratio is much more favourable.^{7/} This is apparently because, broadly speaking, the chemical industry is in an unsatisfactory position as regards technological levels, utilization of investment and costs. Hence its expansion is not sufficiently dynamic to supply the region's very rapidly increasing demand.

Although the Latin American countries have considerably increased their output in the last few years, the region has been importing more and more chemical products, as a result of the particularly marked production deficit in certain groups, including sodium alkalis, chemical products for agricultural use, synthetic rubber, and plastic materials. On the other hand, Latin America's export volumes are not yet very large, and comprise only a small number of items.

This situation suggests the need to seek closer regional co-ordination in respect of the many new projects under consideration in the various Latin American countries, so that the growing demand for chemical products - particularly those of certain characteristic branches of this industry, such as chemical fertilizers, sodium alkalis and petrochemical derivatives - may be supplied as satisfactorily as possible. For example, in the case

^{6/} See ST/ECLA/Conf.23/L.26.

^{7/} See ST/ECLA/Conf.23/L.5 and ST/ECLA/Conf.23/L.3, chapter III.

of the products mentioned, the region possesses raw materials (some of which have not yet been properly surveyed) which would enable it to meet its own requirements and to export certain items, in lines where advantageous basic resources costs could be combined with plants or projects of sufficient capacity to guarantee a competitive foothold in world markets.

It is common knowledge that many chemical industries need a relatively broad market if any new undertaking is to prove an economically sound proposition; it is therefore not surprising that new activities are observable mainly in those countries whose market sizes justify the heavy investment entailed by many lines of manufacture, especially those petroleum derivatives - the basis of a number of synthetic processes - which make up the petrochemicals group (synthetic rubber, lampblack and numerous intermediate products of importance for almost the whole of the chemical industry).^{8/} A development policy following these lines calls for a re-grouping of markets, especially those of small and even medium size, in order to prevent the dissipation of national effort through the installation of units of very low capacity, which in many cases would be unable to face international or even regional competition. The need for regional integration is all the more imperative in this branch of industry because at the world level the prices of many products are pursuing a steady downward trend.

The secretariat has been devoting particular attention to the fertilizer, sodium alkali and basic petrochemical industries. The relevant studies, whose aim is to shed light on the prospects for regionally-integrated development in each of these lines of production, are not yet ready. Some account of the progress made in each case is given in the report on the sector as a whole.^{9/}

^{8/} See ST/ECLA/Conf.23/L.30.

^{9/} See ST/ECLA/Conf.23/L.3, chapter IV.

3. Pulp and paper industry^{10/}

Although the pulp and paper industry has been one of the most dynamic in Latin America in recent years - output of paper and board was practically trebled between 1950 and 1965 -, it still depends to a large extent on imports to keep pace with the growth of demand. In 1964, for example, the region as a whole had to import more than one-fourth of the paper and board it required, the highest proportion of this deficit (61 per cent of the total) corresponding to newsprint. Owing to the special characteristics of the newsprint manufacturing process,^{11/} only four Latin American countries produce this type of paper, and the situation is not likely to undergo any radical change in the next few years.

Analysis of the trends followed during the same period (1950-65) by production of the raw material required for the manufacture of paper and board - i.e., pulp - reveals that output increased more than four times over, that is, to an even greater extent than in the case of the finished product. These differing rates of expansion are indicative of one of the most salient features characterizing the sector in the past few years, namely, its progressive integration, in the sense that its dependence on extra-regional sources for its supplies of pulp is steadily decreasing.

As the region is not very well endowed with the traditional raw material (softwood), Latin American manufacturers have been compelled to use increasing proportions of non-traditional fibre resources, such as hardwood and trash of vegetable origin, in particular sugar-cane bagasse. Such pulps as these, however, cannot entirely take the place of long-fibre pulp and this is why the region still has to satisfy a little over 20 per cent of its total demand for pulp with imports. The proportion will be reduced yet further when the sulphite pulp plant recently installed in Chile, with a view to supplying the Latin American market, enters full production.

The paper industry was launched in Latin America without the simultaneous installation of domestic pulp production capacity. In other

^{10/} As mentioned above, the discussion of this agenda item will coincide with the early part of a series of ECLA/FAO/BTAO consultative meetings of technical experts on the pulp and paper industry, to be held concurrently with the Symposium. Thereafter, the ECLA/FAO/BTAO group will turn its attention to its own specific agenda, which is expected to afford an opportunity for more thorough analysis of both economic and technical questions relating to this industry.

^{11/} See ST/ECLA/Conf.23/L.32, and ST/ECLA/Conf.23/L.3, chapter IV.

words, it started merely as the processing of imported pulp and waste paper from local sources. The establishments were built near the major consumer centres, and, as demand was limited, mill sizes were small. Under the protection of customs duties levied on imports of paper, but not those on raw material, the number of small mills continued to increase and multiply.

In the pulp and paper industry, however, economies of scale play a leading role. The situation is still further aggravated by the fact that a great many of the small- and medium-sized mills do not confine themselves to a single line of production, but manufacture a wide range of items, with the consequent adverse effects on production costs. Nevertheless, recent developments, which are analysed in more specialized papers to be presented at the ECLA/FAO/BTAO consultative meetings, suggest that the present dissipation of effort can be regarded as a passing phase in the growth of this industry. In effect, except for those small mills whose existence can be justified on special grounds relating to location and transport costs, or to the limited demand for the product they manufacture, a trend towards modernization and larger-scale production is observable, which may shortly place the industry in a position to compete with the most efficient producers.

All the foregoing factors, together with others such as low manpower productivity and the heavy costs of capital and of the main inputs, combine to determine the peculiar features of the pulp and paper industry in most of the countries of the region, where the resulting internal price levels are very high in comparison with world market quotations for similar goods.

In contrast, Latin America does possess a small number of large-scale mills with up-to-date equipment, which are efficient enough to take advantage of economies of scale and obtain a satisfactory rate of return on the capital invested.

The outlook for the industry is hopeful in view of the far-reaching possibilities that would be opened up by a broader Latin American market, which would permit better use of installed capacity and specialization at the regional level. This might mean that more imports from outside the region could be replaced by domestically-manufactured products.

/Moreover, it

Moreover, it seems likely, to judge from present trends, that in the not-too-distant future there may be chances of exporting to world markets, especially where pulp is concerned. This subject will come up for discussion under another item on the agenda.

Lastly, such important questions as those relating to the use of non-traditional fibre resources and the financing of the development of the pulp and paper industry will be specially dealt with at the ECLA/FAO/BTAC consultative meetings, which will follow up the sectoral discussion forming part of the Symposium.

4. Metal-transforming industry

In Latin America as a whole, domestic metal-transforming activities satisfy about 60 per cent of consumption of the products concerned. Obviously, one of the determinants of this situation is the pre-eminent part played by the bigger countries of the region, such as Argentina, Brazil, and Mexico, whose metal-transforming industries - accounting for nearly 90 per cent of the Latin American total - have succeeded in meeting very high proportions of consumer demand, and have begun to introduce manufacturing lines that entail a marked degree of technical responsibility.^{12/}

In the small and medium sized countries, widely varying proportions of consumer requirements are supplied on the basis of domestic production, but these percentages are a good deal lower than in the bigger countries, an aggravating factor being that production in the former group is lagging much farther behind the latter's than might be supposed from a direct comparison of the sizes of the respective markets or of other economic indicators. What has happened is that in the smaller countries, the measure of expansion achieved has fallen short of the possibilities afforded by their own markets, despite the limited dimensions of these. Considerable light is shed on this subject by the studies on the metal-transforming industries of Uruguay and Venezuela submitted to the present Symposium.^{13/}

^{12/} See ST/ECLA/Conf.23/L.3, chapter V.

^{13/} See ST/ECLA/Conf.23/L.4 and ST/ECLA/Conf.23/L.13.

From these surveys, as well as from the studies relating to Colombia and Ecuador which are under way, it can be seen that in the small and medium-sized countries the development of the metal-transforming sector betrays serious structural and technological deficiencies, and that it has mainly been kept going by the expansion of industrial maintenance and repair services and by the initial steps taken in the field of assembly of durable consumer goods. The outlook for the metal-transforming industry in these countries is closely linked to the prior establishment of its infrastructure and to the improvement of its technical standards. For example, it will have to be equipped with the requisite production facilities which will not only enable it to supply the individual country markets satisfactorily in the case of the products that have to be locally manufactured, but will also place it in a position to establish complementarity or integration agreements with other countries as regards the manufacture of more complex products, which will undoubtedly represent a substantial part of future intra-regional trade. As transpires from the studies in question, in the case of these countries import substitution is a highly favourable field for the establishment of the proposed infra-structure.

With regard to the manufacture of basic industrial equipment and machine-tools, as well as capital goods in general, the region's greatest progress has naturally been made in the countries with bigger domestic markets. In Argentina and Brazil, domestic production satisfies significant proportions of present consumption of equipment for basic industries, and their installed capacity will suffice to meet a substantial share of the demand projected for the coming decade. To this end, however, a series of measures will have to be adopted to remove certain obstacles that hamper their development today, such as, for example, the introduction of new manufacturing techniques, the training of skilled workers, more balanced distribution of capacity between final goods and intermediate products, more intensive adoption of the practice of sub-contracting services, and the establishment of credit and financing systems, in line with the requirements of this branch of industry.

/In order

In order to obtain a clearer and deeper insight into the problems confronting the basic equipment industry, and its prospects at the national and regional levels, a regional study has been embarked upon, which it is hoped will be completed halfway through the current year.

Machine-tools, in their turn, constitute another type of capital goods whose manufacture in Latin America has made appreciable progress in supplying demand, particularly in Argentina and Brazil. Its evolution in these countries has been very similar, and shares many features in common. The development of this line of production has been the outcome of the individual enterprise and effort of a large number of manufacturers who had at their disposal neither adequate knowledge of over-all market conditions and trends, nor general guiding principles to enable them to turn their investment and their exertions to better account. Nor did they enjoy the support of a clearly-defined policy aimed at encouraging and promoting the installation of this branch of industry. Consequently, at the present time it is structurally weak, and is characterized by a great predominance of small- and medium-scale enterprises lacking the technical and economic resources with which to tackle the construction of more complex machinery on their own account; a marked tendency on the part of manufacturers to concentrate on a single type of machine or a single model, with the consequent loss of the benefits deriving from specialization; and a steadily widening gap between its underdeveloped production line and market requirements, in respect of both diversification and quality. Upon the removal of these structural stumbling-blocks the future growth prospects of the machine-tool industry largely depend, as well as its chances of securing a bigger share in the supply of domestic requirements and a more favourable position in external markets. The report on the manufacture of machine-tools in Argentina presented at this Symposium^{14/} examines these questions and future development problems in considerable detail. In this last context, it may be briefly stated that the machine-tools industry will need to improve its existing structure, that the machine inventory of the manufacturers will have to be increased

^{14/} See ST/ECLA/Conf.23/L.18

and supplemented, and that the quality and productivity standards of certain machines will have to be raised, so that this activity may be brought into line with future demand requirements, which, according to projections, will place more emphasis on production of the more complex types of capital goods than on the mere expansion of the volume of output.

Lastly, it should be stressed that Latin America has a textile machinery industry which is fairly important in some countries, while in others steps are already being taken to establish it, and clearly-defined plans for the future exist. This branch of the metal-transforming industry is also being specially studied, and the data so far collected indicate that current installed capacity in four countries - Argentina, Brazil, Colombia and Mexico - could supply about 60 per cent of the region's total demand. But the present level of utilization of this capacity stands at only 20-30 per cent, and the expansion of the sector is faced with difficulties very similar to those pointed out in connexion with other capital goods: structural weaknesses, under-diversified production, unreliable demand, as regards the characteristics of the machines that will be required, and a shortage of funds even for the purposes of ~~investment in research on the basis of which designs could be modified~~ or worked out in accordance with market requirements.

5. Textile industry

In most of the Latin American countries the textile industry holds a leading rank in the manufacturing sector, both on account of its contribution to the product, and as a source of employment opportunities. Established at the end of the last century, the textile industry encountered favourable development conditions in Latin America. In the first place, plenty of manpower was available, and did not need to be very highly skilled to meet this industry's demands; and, secondly, it has enjoyed a regular supply of domestically-produced raw materials of vegetable and animal origin. This industry accounts for about one-sixth of the value of the whole of Latin America's manufacturing output, and was one of the first branches of manufacturing industry proper to be established in the region.

/Its current

Its current problems are connected mainly with the satisfactory utilization of the resources applied - both human and material - and the achievement of operational efficiency. Import substitution, on the other hand, plays a secondary role in this industry, in the region as a whole, since over 90 per cent of textile consumption is already supplied by domestic production. Accordingly expansion is conditioned by the growth of demand, which in the case of this type of product is characteristically slow.^{15/} But the low per capita consumption levels prevailing in the region suggest the existence of a large body of potential consumers with very little purchasing power, who might respond favourably to a decrease in the relative prices of textiles, apart from the additional demand that might derive from an improvement in over-all income levels.

The comparatively high prices of textile products are largely attributable to heavy production costs, which, in turn, are the result of unsatisfactory operational conditions. These conditions were analysed in a consecutive series of studies carried out by ECLA in relation to eleven Latin American countries - Chile, Brazil, Colombia, Uruguay, Peru, Bolivia, Paraguay, Argentina, Ecuador, Venezuela and Mexico - in response to the interest displayed by textile manufacturers in the region in obtaining information on the situation in each country, in relation to the establishment of the Latin American Free Trade Area.

The studies discussed problems relating to the characteristics of the existing equipment, production capacity, labour productivity, production costs, consumption trends, and evolution of markets, as well as other matters such as the supply and marketing of raw materials and manufactured products. The last four studies in the series, concerning Argentina, Ecuador, Venezuela and Mexico, are presented for discussion at this Symposium.^{16/}

Broadly speaking, with a few outstanding exceptions, the machinery installed is inefficiently utilized in terms of both hourly performance and numbers of hours worked. Similarly, the average level of manpower productivity is very low, which largely offsets the advantages deriving

^{15/} See ST/ECLA/Conf.23/L.3, chapter VI.

^{16/} See ST/ECLA/Conf.23/L.8, ST/ECLA/Conf.23/L.7, ST/ECLA/Conf.23/L.11 and ST/ECLA/Conf.23/L.31.

from low labour costs. Such situations arise in all sorts of mills, old or new large or small, which leads to the conclusion that the decisive factor is the quality of mill management. Only in some cases, does the obsolescence of the machinery explain the low operational indexes; in other instances, the machinery is up-to-date, and yet the index figures reached represent only a fraction of those achieved with similar equipment in the highly industrialized countries. These differences are found not only from one country to another (in their respective averages) but also within one and the same country, where substantial disparities are observable between the more efficient and the less efficient enterprises. The former attain indexes several times higher than the national average, which corroborates the importance of the effects of organization and management on costs. At the same time, it shows that many mills, if they make efficient use of their existing resources, can achieve cost levels which will fit them to compete on international markets.

A certain importance attaches to mill size and economies of scale in the textile industry too, as is shown by the relevant study on the cotton sector, the final text of which is presented at the Symposium.^{17/}

Another document^{18/} of which the preliminary version is submitted for discussion, and which consists in an analysis, at the level of the enterprise, of possible alternative techniques for the Latin American textile industry, contributes useful background material for the formulation of industrial policy in this sector, and may serve as a guide to the private entrepreneur in the decisions he has to take at the level of his establishment, mainly in relation to re-equipment.

From the various studies carried out on the textile industry, including the regional report in course of preparation, the conclusion may be drawn that satisfactory utilization of raw material, labour and capital resources is subject to many contingencies, and cannot develop spontaneously. In particular, the industry at large has no incentive to

^{17/} See ST/ECLA/Conf.23/L.9.

^{18/} See ST/ECLA/Conf.23/L.13.

undertake such improvements in the present conditions of limited competition in closed national markets. Accordingly, it would be worth considering how far - within an over-all industrial development policy - a policy for specific sectors, like the textile industry, could be formulated with a view to actively promoting the more efficient use of production resources. Such a sectoral policy might include, for example, criteria relating to optimum plant sizes, worked out in terms of the savings in investment and production costs that might be achieved. Consideration should likewise be given to the alternative technologies available, so that new investment decisions can be related to the country's situation as regards employment and available supplies of capital. An integral part of a sectoral policy of this type would be constituted by technical assistance to existing industry, designed to push up its efficiency indexes.

III. PROBLEMS RELATING TO FINANCING, EXPORTS AND SMALL INDUSTRY

1. Credit for industrial expansion

The lack of sufficient capital formation in the industrial sector seems to be a reflection, broadly speaking (apart from other factors relating to the general weakness of the development process) of an insufficient reinvestment of the funds generated by enterprises, and the weakness of stock exchanges and credit machinery.

The depreciation reserves of industrial enterprises in the Latin American countries seem to be generally lower than those of enterprises in the more developed countries, and in many cases, where there is inflation, these reserves are sharply reduced by the devaluation of the capital. In addition the reinvestment of profits, which is low in relation to all sources of funds, is often sufficient only to offset in part the inadequate depreciation reserves, without contributing anything towards capital formation or expansion of capacity.

Furthermore, the financial machinery outside the enterprise itself has been able to make up only a part of the deficit in the internal generation of funds. The stock exchanges have contributed little towards the financing of enterprises. In some countries the stock exchange is either non-existent or at a very embryo stage, while in others, where it is more developed, few enterprises use it as a means to increase their financial resources. Most of the transactions are carried out directly between enterprises, or between individual and enterprises, as a result of the family pattern of industrial ownership and management control.

Bank credit is usually available only on a short-term basis, in some cases, with quantitative restrictions and often at high rates of interest. Long-term credit is very difficult to obtain. Although in recent years certain special forms of credit have been devised for development purposes, on a medium and long term basis, as a general rule both the funds for this purpose and the systems used to provide them are not in line with the broad and diverse needs typical of a process of accelerated industrial development. In many cases the commercial banks are not

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authorized to grant medium and long term credits; these are provided by specialized enterprises that are either autonomous or associated with the commercial banks, but operate on the basis of different rules, which often makes the transactions more expensive. Only a few very large enterprises, usually linked with the commercial banks, can avail themselves of credits on satisfactory terms as to maturity and interest, while most of the medium-size and small producers have to operate on the basis described above, or outside the banking system, on much less favourable terms.

One major obstacle to the expansion of Latin American industry is the difficulty of obtaining credit to finance the manufacture of capital goods; this applies to long-term credit for the establishment of new industries, medium-term credit for financing the sales of capital goods on the domestic market of the producer countries, and medium-term credit for financing exports of capital goods. The first problem is part of the general problem of financing industrial projects, but the other two, relating to medium-term credit, concern a different type of need, which calls for some changes in the existing banking systems in Latin America. Faced with foreign competition based on credits on reasonable terms as to maturity and interest, often provided by agencies of the Governments of the country concerned, the capital goods industries in some Latin American countries, which have attained technological and cost levels similar to those of the imported products, find their sales opportunities limited, both within their own national borders and abroad, because of the lack of special credit systems for this type of operation. Hence it is important to review the experiences of the countries that have been seeking to solve these problems through different uses of the financial machinery, such a review has been made in one of the secretariat documents.^{19/}

In addition it is useful to make a comparative analysis of the industrial credit systems now prevailing in the Latin American countries, in order to obtain from this comparison of national experiences the

^{19/} See document ST/ECLA/Conf.23/L.41.

elements of judgement needed for strengthening these systems where necessary. This comparison can be based on the relevant chapter of the study on the industrialization process,^{20/} and on the studies on industrial development presented by the individual countries.

Lastly, it may be helpful to examine, in the light of the conclusions drawn from the above-mentioned analysis, the industrial credit policies applied by inter-American and international financial bodies, as described in the documents prepared by those bodies.

2. Exports of manufactures to the rest of the world

The new conditions that Latin American industry must take into account in planning its future development make it urgent to sell a part of its output abroad. Even if better terms are obtained in the world market for exports of primary commodities, which constitute the bulk of Latin American exports in terms of value, these items are both insufficient in absolute terms and unsatisfactory as growth stimulants, and accordingly they must be complemented by the development of new lines of exports of manufactures, not only to Latin American countries, but also to the rest of the world. Before this can be achieved a number of conditions must be met, both in the Latin American countries, and in the potential purchasing countries.

Firstly, there must be encouragement of the expansion of potential export industries that offer obvious competitive advantages, and the industrial production capacity of the Latin American countries must be increased so that quality and standards requirements can be met, and costs substantially reduced to permit competitive prices. For this purpose it will be necessary, inter alia, to review protectionist policies and integrate them into an over-all strategy of industrial development taking account of potential comparative advantages in the various industrial sectors in terms of labour intensiveness, labour costs, supplies and costs of local raw materials, the possibility of adapting the production techniques involved to local conditions, etc. If the full export potential of the various items is to be realized, high levels of operational efficiency

^{20/} See document ST/ECLA/Conf.23/L.2.

must be achieved, and hence the industries concerned need to operate in an atmosphere of competition that will spur them on to constant technical improvement. Moreover, new forms of financing must be sought, especially for the marketing of manufactured products.

The action taken on these lines, with a view of giving a new direction to industrial development, could be applied through the existing machinery for industrial promotion, although more intensive efforts will be needed in terms of organization and administration. As regards the action required of Latin American entrepreneurs in creating permanent export flows, meeting requirements as to standards and quality, establishing trade contacts with the rest of the world, etc., it may be that further promotional activity will be needed on the part of the specialized public bodies concerned, which should act in close co-operation with the machinery for industrial promotion to ensure that the measures adopted are not confined to immediate or medium-term possibilities, but also take account of, and aim at encouraging, other possibilities based on a long term development.

Another requirement which, though not sufficient in itself, is undoubtedly essential, is that the monetary and fiscal policies adopted should ensure the proper conditions for the export of manufactures. As a corollary, the appropriate institutional arrangements and machinery must be instituted to make possible the necessary knowledge of foreign markets and an evaluation of their future possibilities.

In addition, the obstacles and restrictions that now stand in the way of exports to the developed countries must be removed, in order to permit access to those markets by the developing countries. Of particular importance in this connection are the measures adopted by the United Nations Conference on Trade and Development relating to the abolition or reduction of customs tariffs and other obstacles to trade, and to the granting of preferential tariff treatment on a non-reciprocal basis, together with the measures relating to the encouragement of imports of manufactures from developing countries by means of domestic measures to be adopted by the developed countries with centrally planned economies.

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There is no doubt that Latin American integration can play a major role in facilitating penetration of world markets by exports from the region. However, there are some industrial items for which exports to the rest of the world may be well achieved without waiting for any substantial increase in intra-regional trade.

The short-term and medium-term prospects of a substantial increase in exports of manufactures from some countries in the region are analysed in a study now in course of preparation by the ECLA secretariat in co-operation with UNCTAD and the Symposium will be informed of the progress made with this study. The long-term possibilities have been analysed, in a tentative form, for three industrial sectors, steel, pulp and paper, and textiles.^{21/} The conclusions reached in both types of analyses may be useful for the purpose of making a preliminary judgement both on the practical possibilities of penetrating foreign markets as a result, over the short run and the long run, of a suitable redirection of the process of industrial development, and also on the institutional structure needed to lead local entrepreneurs along the new road to exports, and to organize a continuing exploration of foreign markets.

3. The small enterprise in Latin American development

A study of the process of industrialization in the developed countries shows that small-scale industry played a dynamic role, and that its characteristics and methods evolved on lines that permitted it to become part of an integrated industrial system, in which it occupied an important place.

The economic and social framework within which small industry has developed in Latin America differs from that in the developed countries by reasons of the shortage of capital resources, and the fact that in Latin America the starting point has been an artisan sector mainly concerned with the production of simple and rudimentary products intended to meet the needs of regions far from the main centres of consumption, where income levels are low.

^{21/} See documents ST/ECLA/Conf.23/L.42, ST/ECLA/Conf.23/L.40 and ST/ECLA/Conf.23/L.43.

At the present stage of industrialization in the Latin American countries small enterprise has concentrated its activities on the traditional industries, where it operates side by side with large-scale industry, although there is in fact no direct competition with the latter, except when the small enterprise is designed to do highly specialized work, or work in a scale so small that it is of no interest to medium-size or large enterprises.

Any future industrialization policy should reckon with the important role that small industry may have to play, from the social standpoint, by facilitating the participation in the productive process of a substantial proportion of the human resources available, particularly in those activities in which satisfactory levels of efficiency can be attained on a labour-intensive/capital-extensive basis. Some types of manufacturing activity may lend themselves to such a solution, for example the food industries, certain types of textile manufacturing, and the production of clothing, furniture, etc.

Furthermore, a modern approach to industrialization should take account, in countries where development is at an intermediate stage, of the need to encourage small industry to extend its activities by complementing the production of large-scale industry through sub-contracted work. On the basis of a greater degree of specialization in the production of certain items, small industry may come to play an important part in the industrial process. This is already the case in those countries of the region that have achieved the highest level of industrialization.

Thus far the concern of Governments for small industry has taken the form of piecemeal action that usually reflects a traditional and haphazard approach to the problem. In some countries action has been in the credit sphere, through the medium of financial bodies in others there have been crash training courses at various levels; again, the formation of co-operatives has been encouraged. Broadly speaking, the assistance has been of a rudimentary nature, mainly consisting of the provision of services and guidance.

The approach to small industry in national development programmes is based on definitions that differ from country to country. In some cases the emphasis is on the development of artisan industry and small plants, while in others the artisan sector is excluded and medium industry is included. Some Governments have aimed at developing artisan crafts as part of their plans to encourage tourism.

The foregoing observations show the urgent need to carry out a study covering all the Latin American countries as a region, with a view to determining the approximate quantitative importance of small industry, and evaluating the results obtained thus far through the application of policies to promote and encourage this type of industry.

It should be noted that there is little or no statistical data on small industry that can be gleaned from the industrial censuses in the Latin American countries, since the coverage of these censuses excludes most of the traditional cottage industries, which cannot be regarded as plants. Hence there is a need to encourage action by the technical agencies and statistical offices in the various countries to improve this situation. A quantitative evaluation of the importance of small industry will make it easier to establish criteria for a policy for the industrial development of this size-category.

A Seminar on Small Industry is to be held at Quito in the second half of 1966, sponsored by ECLA and the Bureau of Technical Assistance Operations (BTAO), at which there will be a review at the regional level, for the first time in Latin America, of the present situation of small industry in the various countries; at the same time it is hoped that an exchange of views will take place that will help the participating countries to formulate a policy for this sector of industry, a policy that may eventually come to have a considerable regional element.

The discussion of the role of small enterprise in Latin American development will include such important aspects as the part to be played

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by this sector in generating employment within the industrialization process, the types and branches of small industry that should be encouraged in the light of their technological and economic features; the aims and methods of appropriate technical assistance; the possible adaptation of special technologies to the characteristic features of this sector, to the extent permitted by modern techniques; the improvement of basic statistics, and the research needed in this field.

It is expected that the Symposium will express its views on the agenda for the Quito Seminar and the lines it should follow, in the light of the work that will need to be undertaken in Latin America in this field in the future.

/IV. PROBLEMS

IV. PROBLEMS RELATING TO THE TRANSFER OF TECHNICAL KNOW-HOW,
APPLIED TECHNOLOGICAL RESEARCH AND TECHNICAL ASSISTANCE

1. The transfer of technical know-how from abroad and the adaptation processes and machinery to Latin American conditions

The brief analysis of the prospects of expansion for the various industrial items covered by section II of the agenda leads on to consideration of the extremely high investment requirements involved, and the difficult task of absorbing new techniques that will have to be undertaken by Latin American industry in coming years. The introduction of new techniques and the general need for technological improvement will affect not only the new industries, as an accompaniment to the massive investment that they require (basic metals, capital goods, etc.), but also many of the traditional industries, in order to achieve a better use of the capital invested in them and encourage the modernization and rationalization that are essential for low costs and the consequent stimulus to consumption. Both the dynamic and traditional industries in Latin America need the introduction of new techniques and the raising of the existing technological standards, and this gives rise to difficult problems of many different types. These include the transfer of technical know-how from abroad, either as an accompaniment to foreign investment, or independent of such investment, through licensing agreements.

The transfer of know-how from the industrial countries has played a major role in Latin America's industrial development - and will undoubtedly continue to do so in the foreseeable future - in relation to all the stages of the development of an industrial project, from the feasibility study to the actual operation of the plant, including the intermediate stages of the preparation and evaluation of the investment project. However, experience in the region indicates that certain difficulties may arise unless appropriate precautions are adopted in applying this process. In the first place, there have been many cases where the "closed-circuit" transmission of technical know-how - that is, from one enterprise to another, or more commonly from a foreign parent company to a local branch - has confined the benefits entirely to the

/enterprise that

enterprise that receives it, and hampered the process of disseminating this know-how throughout the local industrial milieu on which the raising of the general technological level largely depends. This limited circulation of technological knowledge is, of course, understandable and unavoidable in the case of brands and patents of commercial value. But the same situation often arises in many cases where such a commercial factor does not enter into the picture, yet nevertheless there is no wide dissemination of the technical information imparted. This problem raises the question of how far it is appropriate, in Latin American conditions to leave the door wide open for the transfer of know-how from abroad through licensing agreements, thus channelling it through individual enterprises, when in many cases such knowledge can be imported on a collective basis through technological institutes or national technical assistance (either for industry as a whole or for specific industrial items), thus ensuring that the technological knowledge imported from abroad is disseminated throughout the local industrial milieu. This question may take on special importance in those cases where payments in foreign currency in respect of licensing agreements is a heavy drain on the limited resources available.

Another problem is the common tendency in industry to regard licensing agreements as a means of improving the generally low technical and organizational level, not only in relation to any strictly specialized production techniques. The local enterprise is often not equipped to absorb and make appropriate use of the special know-how received from abroad, and as a result difficulties often arise between the firm exporting the know-how and that receiving it, quite apart from the expenditure in foreign currency entailed by such arrangements.

There is also the general problem of adapting techniques and machinery obtained from abroad (not only in connexion with licensing agreements) to the special circumstances of the country in which the investment is being made, in terms of the relative cost of capital and labour, factory sizes and installed capacity, and adjustment of the quality or characteristics of the product to the requirements of the local market. Throughout Latin America there have been innumerable unhappy experiences in this connexion, from which a lesson should be learned for the proper direction of the region's future industrial development.

/The techniques

The techniques and machinery available in the industrial countries, which are the traditional providers of both, represent technological choices, as regards capital and labour intensiveness per unit of output, that vary considerably from sector to sector, but more so for the discontinuous-process industries (metal-transforming, textiles, etc.) than for the continuous-process industries (chemical industry, etc.). The range of choice available to the Latin American industrialist - more especially, but not exclusively in the discontinuous-process industries - is sufficient, broadly speaking, to permit him to select the techniques and machinery appropriate for the particular conditions in his industrial milieu, and enable him to invest less capital and use more workers than the same industry in the industrial countries. But such a selection of machinery implies a broad knowledge of the range available throughout the world, and the skill to make a comparative evaluation of the alternatives in terms of technical performance and economic return. Both these requirements - full and detailed information on the production techniques and machinery available throughout the world, and the technical and economic knowledge to evaluate the alternatives - are usually lacking among Latin American entrepreneurs, who have neither the tradition nor the training of the entrepreneur in the more developed countries, nor the various facilities that are available to the latter.

Circumstances such as those referred to above, which are analysed in some of the documents^{22/} submitted for the Symposium, appear to justify a study of the subject, with special emphasis on the problems facing the Latin American entrepreneur in adapting himself to the increasing technological requirements of industrial development.

2. Technological research of industrial application

There is no doubt that most of the industrial progress of the developed countries is the result of technological research. In the developing countries research activities are generally very limited, although they are urgently needed to improve the exploitation of natural

^{22/} See documents ST/ECLA/Conf.23/L.12 and ST/ECLA/Conf.23/L.34

resources, adapt the machinery and technology of the industrial countries to local conditions, and improve product quality and lower production costs. Unless there is a redoubling of research efforts, the gap between the two groups of countries will widen increasingly. It is difficult to measure the direct relation between the results of research and its cost, since the cost should include the money spent on unsuccessful projects. But if the indirect benefits obtained by the community are taken into account, it can be seen that research represents an investment that yields high returns. Furthermore, it can be asserted, broadly speaking, that in the developing countries no research institute can cover its costs by means of its research results, and that all such institutes need a large subsidy that should be provided mainly by the Government. Thus it is necessary to arouse the enthusiasm of Governments, international institutions, universities, and industry itself, in order to promote technological research.

In view of the broad field represented by industry, even in small countries with little industrial development, it is essential that from the outset there should be an institute and laboratories dedicated to the service of industry in general, and capable of contributing to a wide range of productive activities. Once the developing country has sufficient industrial sectors in which there is a substantial body of technological problems to be solved, the next step is justified, which is the establishment of institutes of sectoral technological research. The main functions that an applied research institute should carry out if it is to serve industry adequately are: (a) systematic survey of natural resources and their exploitation; (b) adaptation of national raw materials for non-conventional use; (c) technical development of productive processes; (d) application of new processes on an industrial scale, on conclusion of the stage of pilot plant experimenting; (e) selection or design of the machinery to be used in the industry; (f) economic feasibility studies of industries; (g) general services to industry, such as analysis, quality and standard control, and information about possible solutions to problems that arise and on the progress achieved in other countries; (h) technical assistance to industry through visits to plants; (i) the training of scientific and technical staff for laboratories in industry, etc.

As regards organization, the institutes could be: (a) an integral part of a university; (b) semi-autonomous bodies connected with a university; (c) State bodies; (d) private bodies, generally belonging to some non-profit

/association working

association working on a contract basis; or (e) bodies belonging to a manufacturers' association of some industrial sector. All these systems have their advantages and disadvantages. For example, an institute belonging to a university has the disadvantages that it tends to favour programmes that are likely to be more useful from the teaching standpoint, and that there are administrative difficulties, in terms of solving economic problems, in countries where the university councils or corresponding bodies control the staff and the programmes. At the other extreme is the case of sectoral research associations, where all too often the programmes are confined to problems common to the industry as a whole, to the exclusion of those that might give some competitive advantage to a particular firm that wishes to sponsor a programme. Whatever organizational system is adopted for an institute of applied research, it will be essential to establish links with the planning agencies and with the bodies representing industry, in order to ensure that the work done will be directed towards the basic problems of economic development.

In several Latin American countries there are applied research institutes that work under contract for industry. In most of the others the universities are carrying out some kind of research, or provide some of the services listed above. Argentina is the only country in which the research policy pursued by the Government encourages the formation of sectoral research associations, a percentage of their costs being subsidized.

The Symposium documents include two sectoral studies on the problems of applied research, one relating to pulp and paper, and the other to steel.^{23/} These constitute a study of the problems confronting the industry, and the means available for solving them, in various countries of the region. Because of their broad coverage in terms both of countries and of problems dealt with, these two documents illustrate the problems that arise in many other industrial branches. In this connexion, the points to be considered include: what fields the institutes should cover, and what should be the order of priority in their functions in relation to possible deficits in financial or human resources; within what type of organization and institutional framework the institutes should operate, and lastly, what are the prospects of international co-operation (which will, of course, be easier to obtain, and more effective, if the institutes restrict their activities to a given industrial sector).

^{23/} See documents ST/ECLA/Conf.23/L.6 and ST/ECLA/Conf.23/L.44.

3. Technical assistance for industrial development

The growing importance accorded to various forms of technical assistance in the field of international economic aid is clearly indicated by the substantial increase in recent years in the volume of government expenditure under this head, in the form both of assistance from one Government to another (bilateral), and of contributions by international agencies (multilateral).

This rise in the proportion of technical assistance in relation to financial aid is largely due to the recognition that the benefits of technical assistance include not only a better mobilization of national resources, but also, above all, better use of the financial aid that is the other component of international economic assistance.

Information available on the volume of technical assistance received by Latin America, both in absolute terms and in comparison with other regions, is scanty and incomplete. Nevertheless, it suffices to indicate that the region's share of this assistance is not in proportion to its needs. The information and papers that the countries and organizations participating in the Symposium can provide on this point may be extremely useful for the purpose of forming a more accurate picture on this particular aspect of the problem.

The foregoing considerations also apply as regards the distribution of technical assistance between the various fields of economic activity, since the information available shows that the industrial sector has taken second place, notably to agriculture. Hence one of the main questions must be a review of the volume and characteristics of technical assistance for industrial development in Latin America, in the light of the decisive importance of industrialization in accelerating the process of economic development.

Despite the apparent preference of most of the countries that contribute technical assistance for bilateral forms of this type of aid, the problem should be re-examined with special reference to the particular advantages offered by multilateral assistance, in terms of a better use of the available resources, the possibility of directing the assistance to better purpose, the reduction of forms of "tied" aid, etc., - without prejudice, of course,

/to the

to the advantages that a direct relation between two Governments may also have, especially in terms of more direct communication between the parties. It would also be useful to study the possible advantages of such intermediate methods as the special co-operation of a number of donors for the purpose of a special project, possibly in the form of a group, or aid consortium, and the channelling of bilateral contributions through multilateral agencies while still maintaining, as in the previous case, the identity of the donor country, and also establishing specific aims as regards the fields of application of the assistance. By this means some of the advantages of bilateral and multilateral assistance could be combined.

In recent years the idea has grown up that it is more satisfactory for the purposes of both donors and recipients if industrial technical assistance is requested and accorded as an integral part of a development programme.

In other words, the project approach is taking second place to the programme approach. It might be useful also to explore an intermediate method, consisting in technical assistance provided within the framework of a given industrial branch or sector. This would permit the adoption of a continuing policy to improve the operational conditions in an industry, as regards training at all levels, internal technical and administrative organization, the modernization and rational choice of machinery, and technological research, all within the framework of sectoral programmes based on prior analysis of the existing situation.

Apart from the discussion of these general approaches, it would also be useful to consider other more specific aspects of the technical assistance needed by industry. These might include the following (it goes without saying that this does not exhaust the list, and that the nature and degree of the problems concerned will vary according to individual circumstances and to the stage of development reached by the recipient country), which would appear to represent the forms of assistance most urgently needed: (a) systematic preliminary studies of the possibilities of industrial exploitation of natural resources; (b) feasibility studies for individual industries and specific projects; (c) follow-up provision of technical services both for new projects and for existing industrial plants, in terms

/of advice

of advice on industrial productivity, and on problems relating to the organization and management of small and medium-size industry, etc.;

(d) manpower training at all levels either through the use of fellowships in the industrial countries or through the organization of training facilities in the developing countries, the latter arrangement being the most important as far as the lower levels of industrial workers are concerned.

The analysis of the operational aspects of current technical assistance activities will lead on to a discussion of experience in individual countries, and to an evaluation of the existing machinery. The aim will be to consider whether the present administrative machinery of the recipient countries is best suited to the identification of assistance requirements, the determination of possible sources of aid, and, once this has been obtained, its co-ordination and effective channelling to its final destination.

The foregoing clearly shows that the share of industrial development in international assistance programmes, whether multilateral or bilateral, has failed to measure up to the importance attached to the expansion and modernization of the industrial sector in Latin American development plans. The causes of this situation, which are manifold and vary from country to country, can be examined in detail during the Symposium's discussions, in the light of the region's experience in this field.

V. THE INTERNATIONAL SYMPOSIUM ON INDUSTRIAL DEVELOPMENT (1967)
AND INDUSTRIAL DEVELOPMENT IN LATIN AMERICA

An international symposium is planned for early in 1967. At this date the reports on the regional symposia for Asia and the Far East, Africa, and Latin America will be available, together with the report on the symposium for the Arab countries.^{24/}

The subjects to be dealt with at the international symposium can be grouped under the following three heads:

- (a) Study of the existing status of industry in the developing countries, with an analysis of recent trends and projected development.
- (b) National measures and policies of the developing countries.
- (c) External aspects of industrial development, with particular reference to international co-operation and the measures and policies adopted by the industrial countries.

The Centre for Industrial Development at United Nations Headquarters in New York has suggested a tentative list of agenda topics, as follows:

- I. Survey of industry in developing countries
- II. Development of industrial sectors

- III. Policy aspects of industrial development
- IV. Industrial programming
- V. External trade
- VI. Regional co-operation among developing countries
- VII. Financing industrial development
- VIII. Manpower development
- IX. Small-scale industry
- X. Institutions for the provision of industrial services
- XI. Technical co-operation

The idea is that the final version of the agenda of the international symposium would be drawn up on the basis of the views expressed at the regional symposia, in the contributions made by the participating countries.

^{24/} For further details see document ST/ECLA/Conf.23/L.10.

The documentation for the international symposium will consist, firstly of the reports of the regional symposia, and the documents on the agenda items submitted by United Nations Headquarters, the specialized agencies and the regional economic commissions, and secondly, of any additional material that the participating countries desire to present on the agenda topic.

It is considered that the representation of Member States at the international symposium should be at the ministerial level, and that the delegations should consist of authorities who represent the industrial sector and experts on the subjects included in the agenda.

The international symposium constitutes an outstanding opportunity for the developing countries to present the main problems that affect their industrialization, indicate the measures needed to accelerate their development within the framework of regional integration, and make clear the type and volume of technical assistance that they hope to obtain from the industrial countries and from international agencies.

The international symposium on industrialization will be of special significance for the Latin American countries, since it will be an opportunity for them to stress the special problems and conditions relating to the industrialization process in the region.

C. PROVISIONAL LIST OF DOCUMENTS

<u>Symbol</u>	<u>Title</u>	<u>Submitted by</u>
ST/ECLA/Conf.23/L.1	Annotated provisional agenda, provisional list of documents and outline for the preparation of the national reports.	ECLA **
<u>I. Industrialization in Latin America: evaluation and prospects</u>		
ST/ECLA/Conf.23/L.2	The process of industrial development in Latin America	ECLA *
ST/ECLA/Conf.23/L.28	Industrial development: problems and issues	CID
ST/ECLA/Conf.23/L.35	El desarrollo industrial de la Argentina	Government of Argentina
	El desarrollo industrial de Bolivia	Government of Bolivia
ST/ECLA/Conf.23/L.36	El desarrollo industrial del Brasil	Government of Brazil
ST/ECLA/Conf.23/L.37	El desarrollo industrial de Centroamérica	SIECA
ST/ECLA/Conf.23/L.17	El desarrollo industrial de Colombia	Government of Colombia **
	El desarrollo industrial de Cuba	Government of Cuba
	El desarrollo industrial de Chile	Government of Chile
ST/ECLA/Conf.23/L.16	El desarrollo industrial del Ecuador	Government of Ecuador **
	El desarrollo industrial de Haití	Government of Haiti
ST/ECLA/Conf.23/L.38	El desarrollo industrial de México	Government of Mexico
	El desarrollo industrial del Paraguay	Government of Paraguay
ST/ECLA/Conf.23/L.39	El desarrollo industrial del Perú	Government of Peru

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/El desarrollo

<u>Symbol</u>	<u>Title</u>	<u>Submitted by</u>
	El desarrollo industrial de la República Dominicana	Government of the Dominican Republic
	El desarrollo industrial del Uruguay	Government of Uruguay
ST/ECLA/Conf.23/L.24	El desarrollo industrial de Venezuela	Government of Venezuela **
	(No details are available regarding the submission of the national reports on the other Latin American countries)	
ST/ECLA/Conf.23/L.25	Descripción de las actividades de la ALALC en el campo industrial	ALALC **
ST/ECLA/Conf.23/L.19	The economic significance and contribution of industries based on renewable natural resources and the policies and institutions required for their development	FAO
ST/ECLA/Conf.23/L.20	Some essential requisites for industrial development of renewable natural resources	FAO
ST/ECLA/Conf.23/L.21	Food and food products industries	FAO
ST/ECLA/Conf.23/L.22	Industries processing agricultural products other than food	FAO
ST/ECLA/Conf.23/L.23	Fisheries industries	FAO

II. Present situation, problems and prospects of the main industrial sectors

ST/ECLA/Conf.23/L.3	Los principales sectores de la industria latinoamericana: problemas y perspectivas	ECLA
	1. <u>Basic metals industry</u>	
ST/ECLA/Conf.23/L.29	La economía siderúrgica de América Latina	ECLA

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<u>Symbol</u>	<u>Title</u>	<u>Submitted by</u>
ST/ECLA/Conf.23/L.26	Perspectivas del desarrollo de la industria del aluminio primario en América Latina y posibilidades de integración regional	ECLA
	2. <u>Chemical industry</u>	
ST/ECLA/Conf.23/L.5	Report of the Seminar on the Development of the Chemical Industry in Latin America	ECLA *
	Informe sobre la marcha de los trabajos en relación a las industrias químicas	ECLA
ST/ECLA/Conf.23/L.30	La industria petroquímica en América Latina	ECLA
	3. <u>Pulp and paper industry</u> ^{1/}	
ST/ECLA/Conf.23/L.32	El papel y la celulosa en América Latina (regional report)	ECLA
	4. <u>Metal-transforming industry</u>	
ST/ECLA/Conf.23/L.18	La fabricación de maquinarias y equipos industriales en América Latina: IV. Las máquinas-herramientas en la Argentina	ECLA
ST/ECLA/Conf.23/L.4	The metal-transforming industry in Venezuela: an import substitution development programme	ECLA *
ST/ECLA/Conf.23/L.13	Las industrias mecánicas del Uruguay: Un programa de exportaciones para su desarrollo	ECLA **
	Informe sobre la marcha de los trabajos en relación con las industrias mecánicas	ECLA

^{1/} A consultative meeting on the pulp and paper industry in Latin America will take place concurrently with the Symposium, and some of their discussions will be held in common. At that meeting, a number of documents relating to the present situation and prospects of the pulp and paper industry will be considered over and above those listed in this agenda.

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/5. Textile

<u>Symbol</u>	<u>Title</u>	<u>Submitted by</u>
	5. <u>Textile industry</u>	
ST/ECLA/Conf.23/L.8	The textile industry in Latin America: VIII. Argentina	ECLA *
ST/ECLA/Conf.23/L.7	La industria textil en América Latina: IX. Ecuador	ECLA *
ST/ECLA/Conf.23/L.11	La industria textil en América Latina: X. Venezuela	ECLA **
ST/ECLA/Conf.23/L.31	La industria textil en América Latina: XI. México	ECLA
ST/ECLA/Conf.23/L.9	Economies of scale in the cotton spinning and weaving industry	ECLA *
ST/ECLA/Conf.23/L.33	The choice of technologies in the Latin American textile industry	ECLA

III. Problems relating to financing, exports and small-scale industry

1. Credit for industrial expansion

ST/ECLA/Conf.23/L.41	La financiación de la industria de bienes de capital: análisis preliminar	ECLA
ST/ECLA/Conf.23/L.15	Issues in the financing of industrial development	CID **
	La asistencia financiera para el desarrollo industrial en los planes nacionales de desarrollo	ICAP
	(Document on the contribution of the IDB to the financing of industrial development in Latin America)	IDB
	The experience of the World Bank Group in financing industrial development in Latin America	IDRD-IFC

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/2. Exports

<u>Symbol</u>	<u>Title</u>	<u>Submitted by</u>
	2. <u>Exports of manufactures to world markets</u>	
	Informe sobre la marcha de los trabajos relativos a las exportaciones de manufacturas	ECLA
ST/ECLA/Conf.23/L.42	La exportación al mercado mundial como perspectiva del desarrollo siderúrgico latinoamericano	A. Martijena for ECLA
ST/ECLA/Conf.23/L.40	Prospects for Latin American pulp and paper exports to overseas	A. Sundelin for ECLA
ST/ECLA/Conf.23/L.43	La exportación como perspectiva del desarrollo textil latinoamericano	R. Haour for ECLA
	(Report by IA-ECOSOC on its activities in connexion with the exporting of manufactured goods)	IA-ECOSOC

3. The small enterprise in the industrial development of Latin America

	Informe provisional sobre la pequeña empresa en la industria latinoamericana actual	ECLA
ST/ECLA/Conf.23/L.14	Issues and policies in the promotion of small-scale industries	A. Dasch for CID **
	(Document by the ILO on its activities in the field of small-scale industry)	ILO

IV. Problems relating to the transfer of know-how, applied technological research and technical assistance

1. The transfer of know-how from abroad and the adaptation of methods and equipment to conditions in Latin America

ST/ECLA/Conf.23/L.12	Conocimientos técnicos necesarios para la industrialización de países poco desarrollados y obstáculos que se oponen a su transferencia	E. Grosco for ECLA **
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<u>Symbol</u>	<u>Title</u>	<u>Submitted by</u>
5 ST/ECLA/Conf.23/L.34	La tecnología actual y los obstáculos a su incorporación en la industria siderúrgica latinoamericana	A. Martijena for ECLA
	El nivel tecnológico y las modalidades de transferencia de la tecnología del exterior en la industria química del Brasil	K. Politzer for ECLA
<u>2. Applied technological research in industry</u>		
5 ST/ECLA/Conf.23/L.6	Research on pulp and paper in Latin America	ECLA *
5 ST/ECLA/Conf.23/L.44	Problemas que requieren investigación tecnológica en la industria siderúrgica latinoamericana y reflexiones sobre la acción necesaria	L. Correa da Silva for ECLA
	(Document by the ILO on automation in the industrial development of selected Latin American countries)	ILO
<u>3. Technical assistance for industrial development</u>		
5 ST/ECLA/Conf.23/L.27	United Nations technical co-operation activities for industrial development	CID **
	(Document by the Asociación Interamericana de Productividad on the provision of technical assistance through national productivity centres)	AIP
	(Document by the ILO on technical assistance in the fields of manpower productivity and training)	ILO
	(Document by the ILO on technical assistance for improving management techniques)	ILO

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/(Document by

<u>Symbol</u>	<u>Title</u>	<u>Submitted by</u>
	(Document by OECD on technical co-operation in the field of industrial development between the member countries of the OECD Development Assistance Committee and the Latin American countries)	OECD
	V. <u>The International Symposium on Industrialization and industrial development in Latin America</u>	
ST/ECLA/Conf.23/L.10	Progress report on symposia on industrial development	CID *

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Annex

OUTLINE FOR THE PREPARATION OF NATIONAL REPORTS

I. Past trends

A short account should be given of the recent phases of the industrial process and of the stage it has reached at present. The analysis may either begin at the end of the Second World War or confine itself to the last ten or fifteen years.

II. Relative importance, structure and general characteristics of manufacturing industry

This chapter might contain a description of the current situation of the manufacturing sector, indicating its relative importance in the economy as a whole and its salient characteristics and development problems. Although concentrating on the existing situation, the analysis may also refer back to the last ten or fifteen years.

The relative importance of manufacturing industry could be demonstrated by an analysis of the following indicators:

1. The gross manufacturing product as a proportion of the total gross product
2. The proportion of the total active population employed in industry
3. Industrial investment in gross capital formation

With respect to the structure of manufacturing activities, information might be furnished on:

4. The share of all manufacturing represented by each major branch of industry in terms of production, value added, labour, and, where possible, capital and capital formation, and exports and imports.
5. Characteristics of foreign trade in manufactured goods
 - (a) analysis of the structure of imports and their evolution over the last ten or fifteen years;
 - (b) the same for exports;
 - (c) a more extensive analysis of exports of manufactures and their trends in recent years.

/In relation

In relation to the principal characteristics and problems of manufacturing industry, the following points might be developed:

6. Financing of manufacturing industry. Although the inflation prevailing in a number of countries, and the variety of policies adopted for the amortization and revaluation of assets, hamper the task of finding out how industrial development is financed, an attempt should be made to supply some basic data on the following factors:

- (a) Undistributed profits;
- (b) Depreciation reserves;
- (c) Reserves and provisions of other kinds (indicating their nature);
- (d) Capital investment obtained through issuing of shares and other devices;
- (e) Issuing of shares and capital interests through the use of reserves (specifying the nature of the latter) and revaluation of assets;
- (f) Loans contracted in the country;
- (g) Loans contracted abroad.

It would be useful to include tables of the sources and uses of funds, when available.

Some data should be provided on how far growth of industry is financed from the capital market, with an indication of recent projected measures for giving industrial firms easier access to that market. Some explanation should also be given of the policy adopted for the revaluation and amortization of assets and, where relevant, the relations between these practices and industrial financing.

7. Size and characteristics of manufacturing establishments. Information should be supplied on these aspects. It would be interesting to know the criteria used for defining small industry, and the relative weight of the latter in the industrial sector as a whole.

8. Employment in industry. Give total figures and a breakdown by groups of industries ^{1/} with, if possible, an indication of the levels of skill of the labour force employed. There should be a brief review of general manpower training programmes (excluding specific sectoral programmes, which come into the following chapter).

^{1/} If it proves impossible to obtain data classified according to the list in the annex, a list should be made of the specific activities concerned.

9. Location of industry. This should cover how far manufacturing activities are concentrated in particular areas, recent trends, and the results expected if a policy of decentralization is applied. It would be useful to know something of the principal plans for industrial decentralization based on the creation of an infrastructure in the basic services.

III. The major sectors of manufacturing industry

This chapter should provide a short description of the present situation, past development and future prospects of the major industrial sectors such as steel making, non-ferrous metallurgy (aluminium, copper, zinc and tin), chemicals, pharmaceuticals, pulp and paper, metal-transforming, textiles, rubber, footwear, food processing and any other industries that it is deemed necessary or advisable to include. The analysis of these sectors should cover the following points that generally form the basis of the secretariat's industrial studies.

1. Apparent consumption, production and imports of the sector in question, including projections of demand whenever possible;
2. Description of existing industry in terms of the labour employed, size of establishment, technology and operational conditions (characteristics, age and efficiency of the machinery, labour productivity, etc.)
3. Cost analysis accompanied, whenever possible, by a comparison of domestic (ex-factory) prices with world market prices for similar products;
4. Development problems in each sector, in relation to financing, raw materials and other inputs, labour training, inadequate markets, etc.
5. Prospects for the future development of each sector, and for increasing its share of export trade in Latin American and the rest of the world.

IV. Plans and programmes for industrial development

1. A general industrial development strategy

It should first be explained whether industrial development and the different incentives and methods of promotion adopted by the Government are based on a strategy laid down for the development of industry as part of a general economic development policy. If so, the broad lines of the strategy should be described, with special reference to how the industrial programme is dovetailed with the over-all development plan.

/2. Industrial

2. Industrial programming

If a general industrial development plan or programme is in course of preparation, its main features should be outlined (i.e. goals, the criteria adopted for determining their order of priority, duration, legal provisions, etc.) and the bodies responsible for its preparation and supervision named.

3. Executing agencies in industrial development

What bodies have specific executive responsibility in industry? The Ministry of Industry? A Department of Industry in another ministry? Other agencies? What are the specific functions of the bodies in question? Does authorization have to be obtained beforehand for the establishment of new industrial undertakings? What body gives the authorization and on what grounds does it base its decisions?

4. Sectoral programmes and agencies

Are there special programmes for the development of certain industrial sectors, apart from a general programme for industry as a whole? What is the substance of such programmes and which bodies are responsible for formulating and executing them? How broad are the executive powers of these bodies?

5. Private enterprise in industrial programming

What is the role of private enterprise in the formulation of industrial development programmes (general or sectoral)?

V. Policy measures for industrial development

1. Government promotion of industry

As a general introduction to this chapter, a broad outline should be given of the principal industrial promotion machinery and institutions in the country.

2. Tariff protection

With regard to tariff protection for industry, information should be furnished on:

- (a) the general characteristics of the customs tariff ^{2/} in its main protectionist aspects, and the average levels of protection by broad categories of goods and certain typical products;
- (b) the principal exemptions, whether total or partial, and the system of application;

^{2/} Equivalent duties and charges should also be specified here.

- (c) the regulations or principles established for adapting the tariff to new circumstances as an instrument of protection, and the institution responsible for applying the said regulations and principles;
- (d) a rough assessment of the influence of the tariff on the trend of industrial activities in the recent past.

3. Other forms of import control

Import control by means of quantitative and exchange restrictions of different kinds, from the standpoint of protection of industry. The following are required in particular:

- (a) Description of measures of protection other than the customs tariff;
- (b) Indication of the degree of stability or permanence;
- (c) Analysis of the criteria and procedures to be adopted for co-ordinating the application of these measures with the structure of the existing customs tariff and, in general, with industrial promotion policy;
- (d) A rough assessment of the influence of these measures on industrial development trends.

4. Industrial credit policy

The background information needed in this section should serve to evaluate the industrial credit situation in three respects:

- (a) how far the forms of industrial credit available to domestic industry are in keeping with the country's requirements which, in their turn, are a function of the level of industrial development already attained and the respective problems;
- (b) institutions responsible for administering industrial credit, and the degree of flexibility of credit terms;
- (c) financial resources earmarked for the different forms of industrial credit and the channels through which it is provided, in comparison with the amount required for vigorous industrial growth. 3/

3/ In order not to duplicate the data requested in chapter VI on technical and financial assistance from abroad, domestic credit resources obtained from external loans should be recorded separately.

When the three questions of credit, lending agencies and financial resources are being considered, short-term and medium-term credit for providing enterprises with working capital should be distinguished from medium-term credit for financing exports of manufactures and long-term credit for fixed assets. Special attention should be paid to the domestic financing of sales of capital goods, in the countries where this presents a real problem.

In order to have a bird's eye view of the workings of the credit system in relation to industry, a table should be included showing the public and private agencies, the sums granted in recent years, amortization terms, rates of interest and other relevant items for each of the different forms of credit extended.

It would also be useful to have a critical assessment of how far the system of industrial credit, with its different agencies and forms, has been tailored to the particular requirements of industrial expansion in each country.

5. Tax policy as an incentive and guide for industrial investment

It would be helpful to have information on the following points:

- (a) Tax treatment for industry in comparison with that for other economic sectors;
- (b) Tax regulations relating to the depreciation of assets, reinvestment of profits, revaluation of assets, etc.;
- (c) Other fiscal provisions with a bearing on industrial development, such as regulations on exemptions and subsidies.

6. Legal provisions governing foreign capital and enterprises

- (a) General tenor of policy on foreign capital and enterprises, and possible limitations on the field in which this capital may be invested;
- (b) An outline of the exchange and tax treatment accorded to foreign capital;
- (c) A brief description of any other differential measures that may be applied to foreign companies.

7. Policy for promoting exports of manufactures

An account of the whole body of measures adopted to promote exports of manufactures to Latin America and other regions, with some indication of the specific possibilities over the short and medium term for products that have been given special treatment, and of the results expected in terms of additional foreign exchange earnings.

8. Provisions for small industry

Is there a consistent policy for the modernization and promotion of small industry? What are its terms and which are the bodies responsible for framing and applying it?

Fairly detailed information should be given on the special provisions favouring small industry ^{4/} as regards credit, taxation, training, technical assistance and special forms of promotion, such as the establishment of industrial estates or zones.

9. Direct Government promotion through public or semi-public enterprises

Information is needed on:

- (a) Current Government policy on industrial promotion through public enterprises;
- (b) Existing public enterprises, their number, legal status, administrative and financial systems, share in the production of the sector concerned, and other features of interest;
- (c) Whenever possible, an appraisal of the experience acquired in the existing enterprises, as regards operational efficiency, financial results, rate of growth, etc.

10. Regional industrial development policy

Information should be furnished on current or projected industrial policy to expedite the development of certain areas of the country, the institutions or corporations that may have been established for that purpose and the promotional measures adopted. It ought also to be indicated how far other policy measures for industry or general development (e.g. the rates policy in the transport and energy sectors) would be liable to hamper or prevent a planned policy of balanced regional development from having its full effect.

11. Manpower training programmes

Information should be given on current systems of industrial labour training for the lower and intermediate levels (workmen, foremen, etc.), and on the training institutions, their relations with private enterprise and their financing practices. The facilities represented by such institutions should be evaluated in relation to demand in the country.

^{4/} The criterion underlying the definition of small industry should be explained, so as to clarify the qualifications of such industry for preferential treatment.

12. Productivity and industrial extension services

Agencies responsible for increasing productivity and lending technical assistance for that purpose; their forms of operation, relations with industry and Government, and the source and volume of their funds.

13. Technological research

Institutions of applied technological research for industry, their nature, organization, work programmes and resources. Their relations with industry, the universities and the Government, and their achievements in comparison with national requirements.

14. Standardization

Information on the formulation of technical standards for industry, the organizations concerned, their methods and resources. The results obtained should be reviewed, and future requirements weighed up.

15. Other aspects of industrial promotion policy

This section is concerned with any other method of industrial promotion, or related questions that are considered relevant.

VI. External aid for industrial development

The fullest possible information should be given on the technical and financial assistance received from abroad through multilateral and bilateral channels, and estimated future requirements. It would also be useful to describe the method used by the country for periodically calculating such requirements, and for ensuring that the assistance reaches the national agencies concerned.

1. Bilateral and multilateral financial assistance (public capital) received in recent years for industrial development, and estimated future requirements of both types in the light of the development plans and programmes in preparation or execution.

2. Volume and characteristics of private foreign capital recently invested in industrial development.

3. Evaluation of multilateral technical assistance for industrial development: characteristics, volume, results and estimated future requirements.

4. Evaluation of bilateral technical assistance for industrial development: source, characteristics, volume, results and estimated future requirements.

/5. System

5. System of evaluating multilateral and bilateral technical assistance needs, preparing the respective requests, and the funds to the agencies responsible for carrying out the specific programmes in the country.

6. Provisions relating to patent agreements and royalty payments. Estimated cost, and foreign exchange disbursement under those heads.

VII. Miscellaneous

Other aspects of national experience in industrial development considered of interest.

VIII. Reference works

It would be helpful to list the latest reports, studies and other material of special interest that have been compiled on general aspects of industry by Government agencies, international organizations, universities or other bodies.