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003849



Distr.
LIMITED

ID/WG.113/33
11 October 1972

ENGLISH
ORIGINAL: SPANISH

United Nations Industrial Development Organization

Regional Seminar on Machine Tools
for Countries in Latin America

Buenos Aires, Argentina
16 - 25 October 1972

Sao Paulo, Brazil
26 - 27 October 1972

**METHODOLOGY FOR THE DRAWING UP OF A PROGRAMME FOR THE
DEVELOPMENT OF THE METAL-TRANSFORMING INDUSTRIES ^{1/}**

by

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^{1/} The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. This document has been translated from an unofficially edited text.

id.72-5866

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I. INTRODUCTION

On 26 May 1969, at Bogota, the representatives of the Governments of Bolivia, Chile, Colombia, Ecuador and Peru signed an Agreement on Subregional Integration designed to promote the balanced and harmonious development of the five countries by means of economic integration. This Agreement came into being in response to the requirements of the less developed countries within LAFTA for a joint effort to promote the adoption of practical formulas permitting the maximum acceleration of development. The Cartagena Agreement was conceived within the general framework of the Montevideo Treaty, and consequently one of its purposes is to establish favourable conditions for the conversion of LAFTA into a common market.

The instruments provided for in the Agreement for achieving the objectives proposed include the following:

- (1) Harmonization of the economic and social policies of the member countries;
- (2) A programme for liberalization of tariffs on subregional trade;
- (3) A mechanism for the joint programming of industrial activities, in regard to products specified in a reserve list;
- (4) Establishment of a common external tariff, within a period not exceeding ten years;
- (5) Preferential treatment for Bolivia and Ecuador.

II. INDUSTRIAL PROGRAMMING

Within the integration process under the Cartagena Agreement, it has been felt necessary to give priority to industrial development, naturally without neglecting other sectors of economic activity. It is also believed that, unless the market is expanded, it will be impossible to continue to make progress in industrial development, and that if the process of investment is left to the free play of market forces this may have harmful effects and lead to serious imbalance.

Consequently, a rational distribution of labour must be introduced on the basis not only of expanding the market but also of directing investments in the manner most in keeping with the interests of common development, while seeking to maintain a balance between the member countries, with the aid of policies of which specialization and plant location will be basic components.

Article 32 of the Agreement states: "The member countries commit themselves to undertake a process of industrial development of the Subregion, through joint programming, in order to achieve, inter alia, the following objectives:

- "(a) A greater expansion, specialization and diversification of industrial production;
- (b) Maximum utilization of the resources available in the area;
- (c) The improvement of productivity and the effective utilization of the production factors;
- (d) The advantageous use of economies of scale;
- (e) The equitable distribution of benefits".

Thus the aims of the industrial programming are to overcome the problems posed by the five markets, which are of insufficient size and degree of development for adequate industrial investment. As a mechanism for setting this industrialization plan in motion, sectoral programmes of industrial development have been established; these are provided for in article 33.

The basic idea of the industrial programming exercise is to allocate industrial production among the countries and to guarantee them the whole of the expanded market, with the aid of the location of plants in the different countries, liberalization programmes for the products programmed within the subregional market, the fixing of a common external tariff designed to provide reasonable protection for new products, harmonization of policies in order to ensure effective utilization of investments, measures to ensure adequate financing, and other common measures such as the joint administration of the programme.

The programmes remain in force for a fixed period; the length of this period varies from programme to programme.

Supplementing the sectoral programmes of industrial development, the Agreement provides for additional measures to consolidate and improve existing branches of industrial activity not set aside for programming. Thus provision is made for programmes of rationalization, technical and financial assistance, and training for existing industry, together with agreements on specialization, joint technological research and marketing.

III. PROGRAMMING OF THE METAL-TRANSFORMING INDUSTRIES

Within the industrial branches which will be subject to programming, the metal-transforming industries (including the engineering industries) make up one of the most important sectors for various reasons.

In the first place, the metal-transforming sector provides almost all the production equipment for industry.

In the second place, this is one of the sectors which employs the most specialized and non-specialized labour; moreover, metal-transforming is a branch where technological development is intensive.

In 1970, the subregion imported metal-transforming products to a value of about US\$1,300 million, representing 52 per cent of total imports of manufactures. The reason for the high volume of imports of metal-transforming products is to be found in the low level of local production, which, in the same year, supplied only 42 per cent of demand, a figure which decreases to 30 per cent if durable consumer goods are not taken into account. In other words, existing metal-transforming capacity in the subregion goes mainly into the manufacture of consumer goods, with very little production of capital goods.

Apart from this, the small size of the market and the lack of a suitable policy for protection and the promotion of production has led to the existence of appreciable idle capacity, production on inadequate scales, excessive diversification of plants and consequent high prices or low rates of return on capital.

IV. THE BASES FOR PROGRAMMING

Programming, i.e. the allocation to the five countries of metal-transforming lines not yet in existence or at an early stage, was done on the basis of the following fundamental objectives:

- (a) It was considered necessary to develop and expand the main basic processes of the metal-transforming sector: foundries, forging, heat treatment, fine machining, and the production of dies or fixtures, which are at present inadequately developed in the subregion.

- (b) Capacity for assimilating and generating technology needed to be developed. It is clear that mere knowledge of the above-mentioned processes is not enough to allow the development of the metal-transforming sector. In the initial stage, the technologies may be acquired from more advanced countries. However, a second stage must follow in which technologies are developed on the basis of specific local manufacturing problems, beginning with the adaptation of imported technologies to local conditions and eventually moving on to the creation of new technologies. All this necessarily presupposes the existence of a minimal industrial infrastructure in the metal-transforming branch.
- (c) In the light of the two requirements stated above, it was concluded that the form of industrial implantation which could best meet the needs would consist in specialization by each country in certain families or groups of products permitting the development of the basic infrastructure for the products and allowing a technological development capacity to be created.

This specialization would make it possible to profit from economies of scale and to create external economies. Specialized development would also help to establish relationships of technological or commercial interdependence between the countries. It is well known that the accelerated growth in trade in manufactures which has been occurring for the last thirty years results from a process similar to that which it is hoped to introduce.

Finally, specialization will make it possible to extend this process of complementation and exchange to the rest of LAFTA, a very important consideration if it is borne in mind that subregional integration is an intermediate step towards the establishment of a Latin American common market.

V. THE METHODOLOGY OF PROGRAMMING

1. Delimitation of the sector to be subject to programming

The products to be covered by programming will be included in a list of reserved products, amounting to about a third of the total range of goods in the tariff nomenclature. Prior to programming, the Board of the Cartagena Agreement undertook the task of expressly delimiting the field of products to be subject to programming in the first instance.

It was decided to include in this first metal-transforming programme the largest possible number of products of this sector, excluding those which showed special technical and economic characteristics requiring a more thorough analysis, difficult to carry out within the time available for drawing up the programme.

Some of the criteria for the exclusion of products were the following:

- (i) The relationships between the family of products or the product and other import products or sectors to be programmed separately;
- (ii) The need for detailed programming taking into account the fact that, in the market for these products, foreign brands or technologies of a dominant nature have a decisive influence.

Examples of this group are:

- (a) Parts and apparatuses mainly related to the production of finished motor vehicles, such as transmission shafts, metallic gaskets, revolution counters, etc.;
- (b) Office machines (calculating machines, etc.), related to the field of electronic equipment for professional use, subject to special programming;
- (c) Typewriters, for the same reasons as the above and because there are a large number of assembling shops in the subregion, calling for careful study with a view to their rationalization;
- (d) Boats of more than 1,000 tonnes deadweight, the demand for which depends on subregional transport policies, followed by programming and production.

Other families of products have been excluded from this first programme, but are being considered for subsequent programming. This is the case with products such as printing machinery, optical apparatus, electrical apparatus for medical purposes and other products found in the reserve list.

Similarly, an analysis of the reserve list showed that there were certain other products which could not be allocated to any country for various reasons. This group included technologically simple products which pose no special scale problems and whose manufacture is already justified by national markets, such as small centrifugal pumps, low-pressure gas storage containers, valves of up to 100 mm., etc. Also excluded were those products whose manufacture is highly developed in two or more countries with sufficient or more than sufficient capacity to supply their own markets, and finally products in regard to which production and programming are not considered necessary.

Within the remaining list of products for programming were machine tools. Out of the complete range of machine tools, those machine tools were logically excluded which had been placed on the LAFTA common list: various types of lathes, radial drills above certain dimensions and with certain specifications. A substantial group of machine tools did not appear in the reserve list, particularly those for working sheet metal, but appear in the list for automatic tariff liberalization.

The families of machine tools coming under the programme were thus reduced to the following: mechanical presses, hydraulic presses, milling machines for metals, reciprocating chip-removal machines, forging machines, surface-finishing machines, drills (except the radial drills on the common list), tapping machines and sawing machines.

Those families not included under the programming already undertaken, in the automatic liberalization list or in the LAFTA common list remain in the reserve list.

2. The concept of categories of product for allocation

The delimitation of the categories to be allocated has been a very important process in the drawing up of the programme. It is a result of a sequence of processes based mainly on technico-economic considerations, with an eye to the objectives of the programme which have been mentioned. Thus the Board undertook an initial identification of groups of products which could be regarded as belonging to a single family, either because of the use for which they were intended or because of the nature of the plants in which they could be produced. This preliminary grouping of products was then considered by the first meeting of governmental experts of the five countries.

With the contributions made at this meeting, the Board continued the process of determination of categories to be allocated after systematically considering more specific factors such as the following:

- (a) The formation of a production structure with possibilities for specialization and the assimilation of technology;
- (b) Technological requirements for production to supply the present and potential market, and the degree to which parts can be produced locally;
- (c) Planning of industrial units, without their necessarily having to constitute a single isolated project;

- (d) Study of experience obtained by other countries in the manufacture of these products;
- (e) Consideration of the industries in existence in the subregion;
- (f) Consideration of national aspirations in the sector;
- (g) Complementation in regard to the reservation of products for production in Bolivia and Ecuador, in accordance with the terms of article 50 of the Agreement and decision No. 28 of the Commission.

The application of the above criteria was insufficient in many cases to allow the delimitation of a category for allocation. It was always necessary to gather relevant data on the potential demand or market and assessments of possible volumes of production. In many of the categories, larger or smaller subdivisions can be considered without substantially affecting the basic characteristics of the categories as nuclei for technological development. In these cases it was necessary to decide on the size of the categories to be assigned, and for this purpose the following considerations were taken into account:

- (a) Critical size for technological development. One of the bases of programming in the metal-transforming sector is the creation in the countries concerned of a capacity for assimilation and generation of technology. For this to be possible it is necessary for the categories for allocation to have a minimum or critical size in order to allow external economies in the acquisition, adaptation and generation of technology. These external economies take place not only at the manufacturing stage but also in the stages of investment, project design, negotiations in regard to technology and marketing of products.
- (b) Establishment of new processes and maximization of added value. To the extent to which the categories for allocation allow larger production scales it is possible to ensure local production of a larger number of parts, in a degree which would not be justified in the case of smaller production scales. This possibility means the establishment of new processes.
- (c) Consolidation or establishment of lines of specialization. The aim has been to ensure that the size of the category to be assigned is such that it can constitute an important activity and create or consolidate specialized lines of production.

- (d) Economies of scale. The size of the category to be allocated will have a basic effect in regard to greater economies of scale, and consequently, in determining its size, the aim has been to ensure that production can be efficient as a result of such economies.
- (e) Better utilization of systems of testing and control. In view of the ~~ex~~ expensiveness and effect on costs of systems of testing and control in lines such as the production of measuring instruments or high-voltage transformers, the aim has been to avoid increasing costs under this heading by not dividing the categories.

The delimitation of the categories for allocation within the machine tool group was carried out on the basis of these criteria.

As a result, the following categories were obtained:

- Mechanical presses;
- Hydraulic presses;
- Milling machines for metals;
- Reciprocating chip-removal machines;
- Forging machines;
- Surface-finishing machines;
- Drills (except radial drills);
- Radial drills and tapping machines;
- Sawing machines.

3. Determination of demand

Both for the determination of demand for a base year and for projections at the level of the categories for allocation, difficulties were encountered, some of which are mentioned below:

- (1) In regard to the establishment of a historical series for each country and for the subregion, the information was incomplete and limited in terms of the number of years for which data was available;
- (2) The national statistical code (CEN) of each country was not specific enough to give a full idea of the scope of an item;
- (3) The CEN-NABALALC correlation with which the data was standardized at the level of NABALALC required a case study which was feasible only for 1967, 1968 and 1969.

It must be borne in mind that even if all the basic information (historical series) had been available at the level of the five countries so as to allow the utilization, even with great difficulty, of conventional projection methods, these methods would not have given a projection of demand taking into account the effect of the integration process, as the latter constitutes a parameter involving a change in a structural variable in the projection model.

As data for determining the demand for metal-transforming products included in the sectoral programme, the following information was available:

- (a) CIF value of the imports of the subregion by country at current prices in dollars for 1967, 1968 and 1969, according to the foreign trade yearbooks of each country.
- (b) Production figures for 1967 consolidated by the Chilean Steel Institute (ICHA). This information has been supplemented by data gathered by the Board through field studies and data supplied by countries.

After the available import figures had been analysed, 1967 was selected as the base year for the projections, the import figures for this year being normalized in those cases where the statistics differed substantially from those for other years. This task was carried out for products which were to be covered in the programme.

In the work on strategy, it has been possible to observe the historical behaviour of the economies and also of the industrial sector and the metal-transforming industry. Integration and the adoption of certain economic and social policy measures in the member countries being assumed, the hypothesis established for the growth of the sub-regional economies was an annual 4.5 per cent of the gross domestic product during the past decade; the production of the metal-transforming sector grew at an average rate of 9.6 per cent annually, sectoral demand growing at a rate of 7.3 per cent annually. In the strategy projections, it was assumed that the growth of the gross domestic product of the subregion would be 7 per cent a year for the period 1970-1985. On the basis of this hypothesis, the growth of demand in the metal-transforming sector would be 11.6 per cent a year and the growth in output 15.7 per cent a year during this period.

For projections of demand for the categories to be allocated in the metal-transforming sectoral programme, use has been made of the rates of growth resulting from analyses by the Board and the Latin American Institute for Economic and Social Planning (ILPES) at the level of groups and sub-groups. This treatment has allowed projections for the sectoral programme to be made on conventional bases of a macro-economic character, in addition to permitting a minimum of consistency to be established between the projections for the different categories under the programme.

In the particular case of machines for working wood and metals, demand was projected on the assumption of a share of these machines in the capital goods group compatible with the industrial structure expected in 1985. It was assumed that in that year the machines concerned would account for 20 per cent of demand for capital goods. It was also assumed that the share of the subregional industry in the supplying of demand in 1985 would be in the region of 35 per cent in value terms. This hypothesis regarding the share of such machines in the demand for capital goods and the share of subregional industry in supply signifies an annual rate of growth of demand of 18.1 per cent, and a cumulative annual rate of growth in subregional production up to 1985 of 41.3 per cent.

It seems that these substantial rates are to be explained by the large investment in capital equipment required by the development planned and the low current level of development of the machine tool industry (which constitutes an important part of this group in the subregion): the present output of machine tools in the subregion amounts to a value of barely US\$1 million out of a total demand of around US\$16 million.

4. Machine tools (84.45)

In the particular case of machine tools for working metals, in addition to the application of the criteria stated above, other particular considerations have to be borne in mind. In the first place, the starting-point was taken that specialization in single-process plants devoted to the production of a single type of machine was desirable.

Secondly, the member countries expressed a definite desire to participate in the production of machine tools, considering them of basic importance in the development of their metal-transforming industries.

As a result of these factors, the studies carried out in this sector were more detailed than in others covered by the reserve list. Thus, existing instances of the production of machine tools in the subregion were carefully surveyed, the development of the metal-transforming infrastructure in the five countries was evaluated and the aspirations manifested in national development programmes were taken into account as far as

possible. Against this background, the categories of machine tools for allocation under the programme were distributed in five groups to be allotted among the five countries. As a result, the production of radial drills, tapping machines and sawing machines was assigned to Bolivia, forging machines and surface-finishing machines to Colombia, mechanical presses and milling machines to Chile, hydraulic presses and reciprocating chip-removal machines to Ecuador, and mechanical presses and drills to Peru.

5. Targets for production and integration

Once the categories for allocation were determined, taking into consideration, inter alia, the volume of demand, a qualitative analysis was made of each category in order to provide an approximate idea of the extent to which the subregion might be able to supply this demand. Along with this analysis consideration was given to the indicators set forth as substitution targets in the strategy document, and at the same time the situation in a country whose present stage of development is similar to that expected in the subregion in 1980 was analysed. Subsequently, on the basis mainly of the technological complexity of each of the categories for allocation, a qualitative analysis was also made of the possible average content of directly imported parts in the subregional product.

Table 2 shows the machine tool group with these two indicators which we have mentioned.

6. Allocations under the programme

The criteria which guided the Board in proposing allocations for each country and when analysing these allocations are explained below.

6.1. Criteria for allocation

Once the categories for allocation had been determined, a list of allocations for each country was drawn up, by a process in which the following were the guiding criteria:

- (a) Creating an industrial infrastructure and establishing or strengthening a technological base capable of allowing adequate development of the sector in the country concerned, in accordance with the objectives of the programme;

- (b) Creating or consolidating possible fields of specialization for each country, based on branches of production which were technologically homogenous and, in many cases, showed similar characteristics as to marketing;
- (c) Consolidating existing production lines in the country and raising their efficiency on the basis of the expanded market;
- (d) Meeting national aspirations;
- (e) Complementing important existing activities using the product;
- (f) Complementing production allocations made to a country earlier (e.g. the article 50 list);
- (g) Taking advantage of the existence of favourable local conditions so that the production concerned could be carried out in the most efficient manner;
- (h) Ensuring equitable distribution of the benefits of the programme.

Some categories for allocation suggest themselves for division between two countries because there is already substantial production in these countries in the lines concerned or because the volume of production envisaged makes possible at least two efficient production centres.

6.2. Analysis of the allocations for each country

Owing to the characteristics for the programming of the metal-transforming sector it has been impossible to construct a complete set of economic indicators and all that can be done is to estimate the gross value of production feasible for each category.

It is therefore clear that a qualitative and particularly a technological analysis of the significance of the allocations for each country acquires fundamental importance. Assessment simply on the basis of the figures for possible value of production would involve serious limitations, since this would be based on the assumption that the value of production would be a homogeneous indicator of the net benefits of the programme, ignoring for example the added value that it includes, the foreign currency that it produces or saves and the contributions, quantifiable or otherwise, that it makes to the development of each country. In spite of these limitations, however, this indicator has been used to give a quantitative idea of its possible size.

The total value of production envisaged for 1980 for the allocation for each country, broken down by type of product, appears in table 3.

Tables 4 and 5 then indicate the structure of the allocation, in terms of the share of each country in each type or group of products and the composition of the "package" assigned to each country.

VI. OTHER COMPONENTS OF THE PROGRAMME

To ensure that the objectives of the programme are achieved, a series of further measures is necessary in addition to the distribution of plants among the countries concerned. Among these measures, the following should be mentioned:

- (a) An obligation for the countries to initiate production of the items assigned to them within a period not exceeding six years from the date of approval of the programme in the case of Colombia, Chile and Peru, and seven years in the case of Bolivia and Ecuador.

The plants may not begin operation until the countries have submitted technico-economic studies from which it can be concluded that the goals and objectives of the allocation will be fulfilled.

- (b) Liberalization programme. To guarantee that advantage can be taken of the expanded market, those countries other than the one to which a production category is allocated must eliminate all duties on the import of the products included in this category originating in or coming from the country of allocation within 30 days from the approval of the programme.

- (c) Common external tariff. To ensure that effective advantage can be taken of the subregional market, production must be protected by a common external tariff, in respect of which:

- The member countries undertake to apply the common external tariff rates appearing in table 6 to imports of the products covered in the programme when they originate in and come from countries outside the subregion;

- The member countries will apply the common external tariff rates for the products covered in the programme from 31 December of the year immediately preceding that in which production is to be commenced;
- On the same occasion, the Board can decide that the common external tariff rates are to be applied to other products of the same allocated category when it considers that their import from outside the subregion may seriously prejudice the objectives of the programme or impair the effectiveness of the allocations granted;
- If any production exists on the date when the present decision is approved, the common external tariff for the products concerned is to be adopted once the Board verifies the existence of production and communicates the fact to the member countries.

(d) To avoid the duplication of plants within the categories allocated, the member countries undertake not to encourage the initiation in their territories of new production lines which have not been allocated to them and which may effect the allocation granted to another member country or other member countries.

To this end they undertake not to grant new privileges of the nature of those mentioned nor to expand those already granted to production existing in their territories on the date when this decision is approved.

In addition, there are other further measures such as incentives for the formation of multi-national enterprises, a metal-transforming committee for the implementation of the programme, application of technical standards to the products covered by the programme, etc.

TABLE 1

CATEGORIES FOR ALLOCATION: DEMAND AND PROJECTIONS

| CATEGORY FOR ALLOCATION | Demand in 1967 (millions of US\$, current prices) | PROJECTION OF DEMAND (m. of US\$, 1970 prices) | | | Annual rate of growth 1972-1980 |
|---------------------------------------|---|--|--------------|---------------------------------------|---------------------------------------|
| | | 1967 | 1972 | Annual rate of growth 1967-1972 | |
| MACHINE TOOLS | 5.7 | 6.5 | 11.48 | 58.46 | |
| - Mechanical presses | 1.0 | 1.1 | 1.72 | 9.3 | 7.40 20.0 |
| - Hydraulic presses | 0.9 | 1.0 | 1.56 | 9.3 | 6.71 20.0 |
| - Milling machines for metals | 0.8 | 0.9 | 1.84 | 15.4 | 12.45 27.0 |
| - Reciprocating chip-removal machines | 0.5 | 0.6 | 0.96 | 9.9 | 2.74 14.0 |
| - Forging machines | 0.4 | 0.5 | 0.57 | 2.5 | 1.25 10.3 |
| - Surface-finishing machines | 1.3 | 1.5 | 2.89 | 14.0 | 17.07 24.8 |
| - Drills | 0.25 | 0.3 | 0.69 | 18.0 | 4.52 26.6 |
| - Radial drills and tapping machines | 0.25 | 0.3 | 0.69 | 18.0 | 4.52 26.6 |
| - Sawing machines | 0.3 | 0.3 | 0.55 | 13.1 | 1.80 15.7 |

The total value of demand under the programme would be US\$793,530,000 for 1980.

Note: The average total demand for machine tools in the years 1967-1969 was US\$16 million.

TABLE 2

CATEGORIES FOR ALLOCATION: SUPPLY BY THE SUBREGION, CONTENT OF DIRECTLY IMPORTED PARTS AND VALUE OF PRODUCTION ESTIMATED FOR 1980

| CATEGORIES FOR ALLOCATION | % of demand supplied by the subregion | Value of production, millions of US\$, 1980 prices | Content of directly imported parts (% of the value of production) |
|---------------------------------------|---------------------------------------|--|---|
| | 1980 | 1980 | 1980 |
| MACHINE TOOLS | | 8.63 | 20 |
| - Mechanical presses | 20 | 1.43 | 30 |
| - Hydraulic presses | 20 | 1.34 | 40 |
| - Milling machines for metals | 10 | 1.25 | 30 |
| - Reciprocating chip-removal machines | 20 | 0.55 | 40 |
| - Forging machines | 10 | 0.13 | 40 |
| - Surface-finishing machines | 10 | 1.71 | 20 |
| - Drills | 20 | 0.91 | 20 |
| - Radial drills and tapping machines | 20 | 0.90 | 10 |
| - Sawing machines | 20 | 0.36 | |

TABLE 3

SECTORAL PROGRAMME FOR THE METAL-TRANSFORMING INDUSTRIES:
SUMMARY OF THE ALLOCATIONS BY TYPE OF PRODUCT

VALUE OF PRODUCTION ESTIMATED FOR 1980

(Millions of dollars as at 1970)

| TYPE OF PRODUCT | BOLIVIA | COLOMBIA | CHILE | ECUADOR | PERU | TOTAL |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Machinery of a specific nature | 10.43 | 12.80 | 11.15 | 1.49 | 21.63 | 59.50 |
| Machinery of a generic nature | 10.51 | 17.63 | 7.38 | 2.72 | 17.89 | 56.13 |
| Machine tools | 1.26 | 1.84 | 1.99 | 1.89 | 1.65 | 8.63 |
| Electrical equipment | 10.35 | - | 20.68 | 10.35 | 19.45 | 60.83 |
| Transport equipment | - | 17.37 | 2.81 | - | - | 20.18 |
| Tools and instruments | 0.08 | 7.30 | 6.08 | 17.17 | 4.57 | 35.20 |
| Consumer goods and related goods | 0.94 | 17.52 | 20.83 | 3.56 | 1.84 | 44.69 |
| TOTAL | 33.57 | 74.46 | 70.92 | 37.18 | 67.03 | 283.16 |

TABLE 4

SECTORAL PROGRAMME FOR THE METAL-TRANSFORMING INDUSTRIES: ALLOCATIONS BY TYPE OF PRODUCT: STRUCTURE OF PARTICIPATION OF EACH COUNTRY IN SUBREGIONAL PRODUCTION, BY GROUPS, IN VALUE TERMS, AS ESTIMATED FOR 1980
(Percentages)

| TYPE OF PRODUCT | BOLIVIA | COLOMBIA | CHILE | ECUADOR | PERU | TOTAL |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Machinery of a specific nature | 18.14 | 22.26 | 19.39 | 2.59 | 37.62 | 100.0 |
| Machinery of a generic nature | 18.72 | 31.41 | 13.15 | 4.85 | 31.87 | 100.0 |
| Machine tools | 14.60 | 21.32 | 23.06 | 21.90 | 19.12 | 100.0 |
| Electrical equipment | 17.01 | - | 34.00 | 17.01 | 31.98 | 100.0 |
| Transport equipment | - | 36.08 | 13.92 | - | - | 100.0 |
| Tools and instruments | 0.23 | 20.74 | 17.28 | 48.78 | 12.97 | 100.0 |
| Consumer goods and related goods | 2.10 | 39.20 | 46.61 | 7.97 | 4.12 | 100.0 |
| TOTAL | 11.86 | 26.30 | 25.05 | 13.12 | 23.67 | 100.0 |

TABLE 5

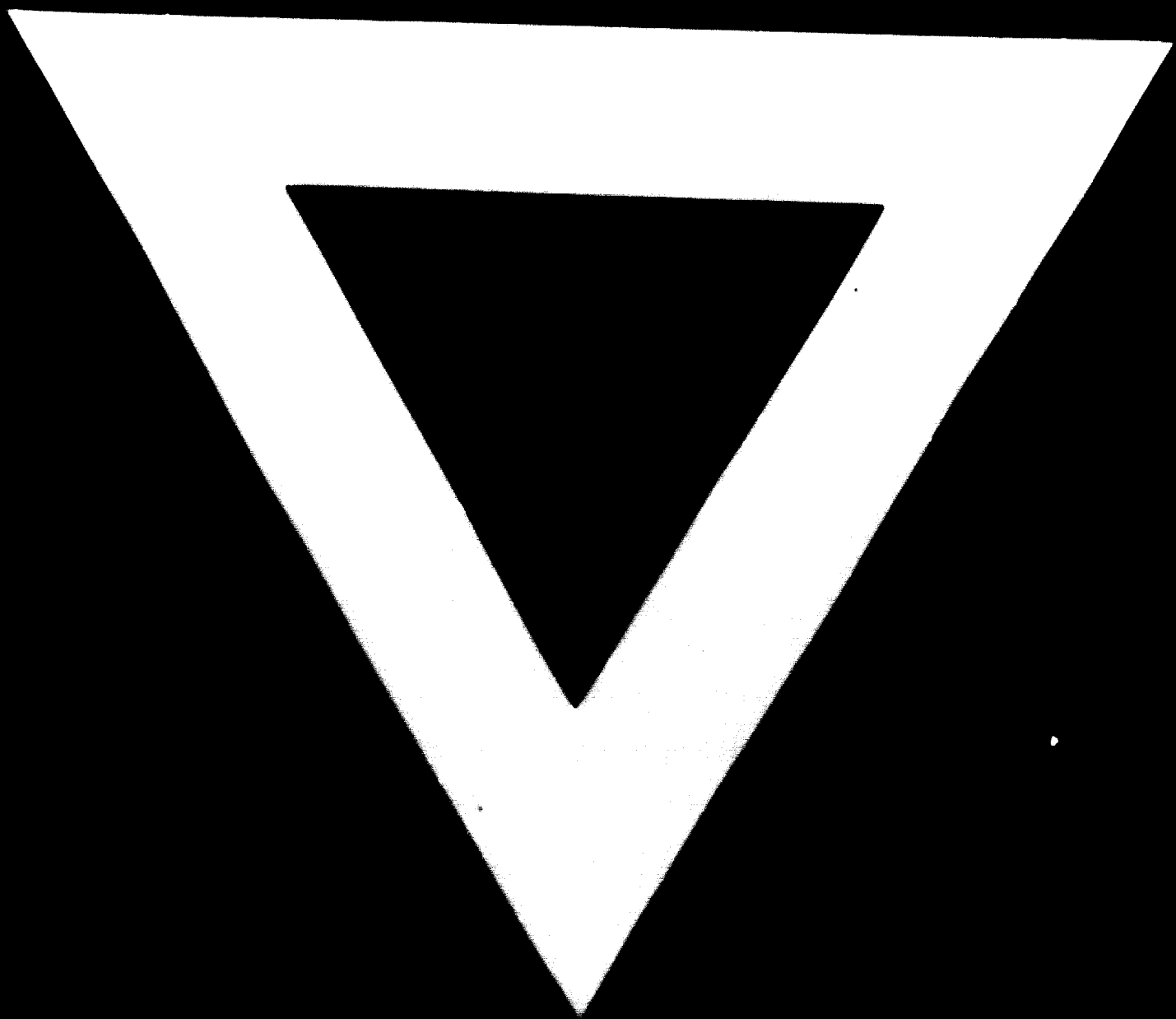
SECTORAL PROGRAMME FOR THE METAL-TRANSFORMING INDUSTRIES: ALLOCATIONS BY TYPE OF PRODUCT: STRUCTURE OF PARTICIPATION BY GROUPS IN THE VALUE OF PRODUCTION FOR THE TOTAL ALLOCATION OF EACH COUNTRY, ESTIMATED FOR 1980

(Percentages)

| TYPE OF PRODUCT | BOLIVIA | COLOMBIA | CHILE | ECUADOR | PERU | TOTAL |
|----------------------------------|---------|----------|-------|---------|-------|-------|
| Machinery of a specific nature | 31.07 | 17.19 | 15.72 | 4.01 | 32.27 | 20.31 |
| Machinery of a generic nature | 31.31 | 23.68 | 10.41 | 7.32 | 26.69 | 19.82 |
| Machine tools | 3.75 | 2.47 | 2.81 | 5.08 | 2.46 | 3.05 |
| Electrical equipment | 30.83 | - | 29.16 | 27.84 | 29.02 | 21.48 |
| Transport equipment | - | 23.33 | 3.96 | - | - | 7.13 |
| Tools and instruments | 0.24 | 9.80 | 8.57 | 46.17 | 6.82 | 12.43 |
| Consumer goods and related goods | 2.80 | 23.53 | 29.37 | 9.58 | 2.74 | 15.78 |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 6
COMMON EXTERNAL TARIFF FOR THE PRODUCTS COVERED
BY THE PROGRAMME MACHINE TOOLS

| NABANDINA | PRODUCT | COMMON EXTERNAL TARIFF |
|-------------|---|------------------------|
| 84.45.02.00 | Planers and shapers | 65 |
| 84.45.03.00 | Drilling and boring machines and the like, radial (except those included in the first block in the common list) | 70 |
| 81.45.03.00 | Drilling and boring machines and the like (except radial drills) | 60 |
| 84.45.04.00 | Tapping and threading machines | 70 |
| 84.45.05.00 | Milling machines | 70 |
| 84.45.06.00 | Saws | 65 |
| 84.45.07.00 | Grinding machines | 70 |
| 84.45.08.00 | Hydraulic presses | 65 |
| 84.45.08.00 | Presses, not hydraulic | 60 |
| 84.45.09.00 | Hammers and pile drivers | 60 |
| 84.47.05.00 | Hydraulic presses | 65 |
| 84.48.00.00 | Parts for planers and shapers | 55 |
| 84.48.00.00 | Parts for the hydraulic presses under headings 84.45 and 84.47 | 55 |
| 84.48.00.00 | Parts for tapping and threading machines | 60 |
| 84.48.00.00 | Parts for saws | 55 |



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