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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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FINAL REPORT PREPARED FOR THE GOVERNMENT OF MEXICO

INDUSTRIAL PROGRAMMING[1/]

(TS-DP/MEX/73/011)

by

UNIDO Experts

1/ The views and opinions expressed in this paper are those of the authors and do not necessarily reflect the views of the secretariat of UNIDO.

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SUMMARY

The first industrial programming exercise is meant to give preliminary figures of trend developments up to 1976 and 1982 and to outline the need for further action.

The Plan Nacional de Desarrollo Económico y Social issued by the Secretaría de la Presidencia specifies the Government's overall economic strategy and strategic goals for the industrial sector. Against these targets the industrial programmers have prepared trend extrapolations of autonomous development.

Total value added for the secondary sector (including the mining and petroleum industry sectors) shows a "planning gap" in 1976 of 10 per cent. To bridge this gap an average annual growth of more than 11.5 per cent is required. Considerable efforts would be necessary to attain this growth rate. Presidencia's target growth rate of 10 per cent for the manufacturing industry is also substantially higher than the projected rate.

Employment projections for the manufacturing industry reveal that autonomous development will create 680,000 employment opportunities in the period 1976 - 1982 while the Presidencia target figure for the period 1974 - 1980 is 1,180,000. This gap shows the need for serious consideration.

Projections of capital requirements for the manufacturing industry show that in 1976 a minimum investment of 21.58 billion pesos is required to attain projected production figures. Between 1976 and 1982 (in total) 294 billion pesos of investment are projected.

The projections show firstly that there is a clear need for continued industrial programming work including more detailed branch analyses and an improved data base. Secondly, it is shown that thorough investigations are required of the role of policy measures in order to ensure the attainment of development goals.

COVERING NOTE

The Government of Mexico requested UNDP/UNIDO to assist the Secretaría de Industria y Comercio (SIC) in the preparation of an industrial development programme and the formulation of appropriate policies/recommendations.

The tasks to be performed by the UNIDO experts were to advise on and assist in (1) the analysis of the industrial structure and development trends; (2) the collection of further data; (3) the choice of appropriate methodologies and approaches; (4) the definition of development priorities in the light of Government industrial development objectives; (5) the preparation of industrial programmes and (6) the formulation of policy measures for the implementation of the industrial programmes.

The industrial programme to be prepared was to be a perspective plan reaching to 1982, i.e. covering the current and following presidential periods.

The following UNIDO experts were assigned to the project (in alphabetical order):

Name	Duration of Assignment
Mr. Rudolf Eder	18.3.1974 - 12.7.1974
Prof. Alan Manne *	24.3.1974 - 25.3.1974
Mr. Herman Muegge **	13.6.1974 - 28.6.1974
Mr. Benjamin Toren	10.3.1974 - 12.4.1974 9.6.1974 - 2.7.1974

Before the start of the assignment in Mexico a meeting was held in UNIDO headquarters with the experts and an official of SIC to outline the suitable approaches and a timetable for the programming work. In view of the very short time available for the elaboration of the programme and the lack of certain data, the scope of the work was revised to cover the following tasks:

1. Elaboration of a first industrial development programme including a basic approach and data collection for economic policy issues. ***
2. Elaboration of a working programme for the future programming activities of SIC.

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* Short-term adviser to the project.

** UNIDO Staff-member

*** A basic review of policy instruments was undertaken and handed over to SIC separately for further elaboration and follow-up.

The attached report starts with a brief description of the background, objectives and basis of the programming exercise. The projections of industrial production, employment and investment up to 1982 constitute the main part of the report. The tables are in Spanish. A separate chapter outlines the area of policy instruments.

The background material and projections prepared during this short period can, at best, be viewed as a first approximation of targeted sectoral development. The programming study is thus considered as a first, tentative step in the establishment of an industrial programme and the development of a continuous programming process.

This report aims at indicating main "planning gaps" and to show the need for specific, detailed analyses.

The follow-up and continuation of the programming exercise therefore received particular attention in the report. The report includes (see Annex I) recommendations for specific actions and studies to be undertaken in the near future. The institutional requirements and the need for UNDP/UNIDO assistance to carry out the further industrial programming work are also treated (Annex II).

The programming exercise was carried out jointly by the Department of Promotion and Industrial Programming of the Secretaría de Industria y Comercio, and the above mentioned UNIDO experts. The report is thus the result of this joint work.

The counterpart team was composed of the following professionals:

Lic. Javier Avila Gonsales, Chief of Department
Lic. Nestor Fernandes Vertti
Lic. Carlos Peres Grandados
Lic. Hernandes Peres Palacios
Lic. Miguel Angel Valencia Fernandes
Lic. José Wilcox

The programming exercise received due attention and overall guidance from Lic. Guillermo G. Becker, Subsecretario de Industrias.

1. INTRODUCTION

1.1 General Background

The Government of Mexico is placing increasing emphasis on the role of manufacturing industry in the overall economic development process for attaining long-term development goals and objectives.

The basic objective for industrial development is to achieve a rapid increase of value added in manufacturing and thus to contribute to a high overall economic growth rate and to the creation of employment opportunities in the industrial sector. Besides the goal of rapid increase in value added and employment, the Government's industrial development objectives encompass the following sub-goals:

- Achievement of a better spatial distribution of industries
- Increase in manufactured exports
- Increase in economic independence

It is the Government's declared policy that the attainment of these goals and sub-goals should be undertaken within the basic framework of the prevailing (mixed) economic system in which the private industry sector plays a major role and the public sector is acting beside it with an exclusive role only in certain specified areas of economic activities.

Direct public investment is expected to continue to have a limited role in the industrial development process, whereas promotional and regulatory measures will be the major means of the Government to influence and adjust the resource allocation in accordance with development objectives. While the question of foreign versus domestic ownership is regulated in principle the Government attempts to direct the long-term industrial development process towards avoiding foreign dominance or excessive influence in particular industrial activities.

To attain the described industrial development objectives, the Government will stimulate and direct investments in strategically important industrial activities with high potentials for growth, exports and employment and influence the existing industrial sector to improve its performance in the fields of declared priority. Realising the

increased need for a systematic and effective steering of the industrial development process, the Government has embarked on the preparation of industrial programmes and the review of policy measures in the framework of an overall economic planning process. The industrial programming is meant to yield a quantitative assessment and projection of the future pattern of industrial development and to design or re-design appropriate policy measures for achieving the targeted development. It is also meant to demonstrate the pros and cons of various strategies and policies and to enable the policy maker to make decisions based on long-term development considerations.

As a first step in establishing an industrial programming process, the Secretaría de Industria y Comercio has undertaken during a three-months period to make an initial set of projections of industrial development up to 1982.

The results and recommendations of this programming exercise are contained in the report.

A report entitled "Industrial Protection in Mexico" was previously prepared with UNDP/UNIDO assistance and deals with foreign trade and industrial policy. The observations and recommendations are not repeated here although they are relevant in this context.

1.2 The Basis of the First Programming Exercise

The basis of the first programming exercise is the National Development Plan 1974 - 1980. The following brief review of the plan aims at giving an introduction to the scope of present planning activities in Mexico and summarising the basic parameters and targets that are relevant for the industrial programming exercise. The review serves this purpose only and gives therefore not a complete picture of the plan.

The Secretaría de la Presidencia presented in July 1973 a comprehensive document in seven volumes called "PLAN NACIONAL DE DESARROLLO ECONOMICO Y SOCIAL 1974 - 1980".

This document was elaborated by the following bodies:

- Secretaría de la Presidencia
- Secretaría de Hacienda y Crédito Público
- Secretaría de Patrimonio Nacional

in co-operation with:

- Consejo Nacional de Ciencia y Tecnología
- Fondo de Cultura Económica, and
- Comisión Económica para América Latina.

The plan contains proposals on an overall economic development strategy, development targets and sectoral programmes including policies. According to the covering note of the document it was presented to the various programming units of the Secretarías and other institutions for discussion and will be then submitted to the "Titular del Ejecutivo" for further consideration.

In the first volume of the plan, "Lineamientos para el programa de desarrollo económico y social 1974 - 1980", an outline of the proposed programme is given. Of particular interest is the chapter on quantitative targets. The targets can be summarised as follows:

(1) Total employment is supposed to increase by 3.4 per cent yearly instead of 2.3 per cent during the past decade.

(2) GNP is planned to grow at a rate of 8 per cent per annum in real terms instead of 7 per cent per annum during the period 1960 - 1970.

(3) Agricultural production is planned to grow at a rate of 5 per cent per annum. Exports of agricultural products should increase at a rate of 5.5 per cent and the increase of labour absorption of the sector should pass from 0.4 per cent to 1.5 per cent per annum.

(4) The level of investment expenditures is expected to increase from 20 per cent to 23 per cent of GNP in 1980.

(5) Public expenditures should increase at a rate of 25 per cent above the rate of growth of GNP.

(6) The balance of payments deficit should not exceed US$ 1,200 millions in 1976. Exports should increase at a rate of 15 per cent per annum.

Other global targets are reproduced from the original document in table 1.1.

Cuadro 1.1: Metas Cuantitativas Globales

Conceptos	% del PIB		Tasa Media Anual de Crecimiento	
	1974	1980	1960 - 1973 %	1974 - 1980 %
PIB real			7.0	6.0
Precios			3.6	4.0
PIB monetario			11.1	10.1
Inversión fija bruta	20.1	23.0	12.3	16.4
Pública	6.8	9.7	14.8	19.7
Privada	13.3	13.3	11.3	14.3
Consumo				
Público	8.1	10.3	13.1	18.0
Privado	73.0	67.3	10.2	13.3
Gasto público	25.4	32.4	-	18.0
Consumo gubernamental	8.1	10.3	13.1	18.0
Inversión bruta fija	6.8	9.7	14.8	19.7
Crédito agrícola oficial, apoyo comercialización, fideicomiso, etc.	10.5	12.4	-	16.9
Empleo				1970 - 1980
Creación de empleo (demanda)			2.3	3.4
Personas que buscan trabajo (oferta)			2.6	2.6

Fuente: Plan Nacional de Desarollo Economico y Social 1974 - 1980.

Of special interest are the assumed relatively low price increases of [illegible] per cent, the increase of the level of public investments from 6.8 per cent of GNP in 1970 to 9.[illegible] per cent of GNP in 1980 and the inverse development of the rate of consumption in the private and public sector.

One volume of the "Plan Nacional de Desarrollo Económico y Social" deals with the industrial sector. The introduction gives a short outline of past development and problems of the sector. The main findings are:

1. The past considerable development of the industrial sector is closely linked with the policy of high protection and the development of the infrastructure.

2. The high protection has reserved the domestic market for national producers, has encouraged investments, but also allowed production without foreign competition. Furthermore it has encouraged horisontal diversification of the production without regard to productivity.

3. Any mechanism leading to specialising in production under comparative advantages was eliminated.

4. Oligopolies in many fields have hampered improvements in the field of costs, technology and quality. In many cases incentives led to the establishment of over-capacities whereby the employment effect of investment was reduced.

5. The regional distribution of manufacturing industries is characterised by the fact that two thirds of the manufacturing products are produced in the Federal District and the States of Mexico and Nueva León.

In regard to the connexion of industrial policies, with the formulated development strategy, the plan mentions the following considerations:

1. The present administration formulates a new development strategy, which assigns special responsibilities to the manufacturing industry as a means to realise general targets of national development.

2. The general targets are:

   (a) accelerated growth: 8 per cent in real terms for the whole economy;

   (b) better distribution of the benefits of economic progress;

(c) an employment policy which guarantees a gradual reduction of any kind of under-employment; and

(d) perfectioning of the national autonomy.

3. The new phase of industrialisation should be based on:

(a) widening of the home market;

(b) increased exports of manufactured goods;

(c) selective substitution of imports;

(d) emphasising activities like the fostering of the development of capital goods industries and those activities which favour employment and decentralisation;

(e) improving productivity;

(f) increased inter-industrial integration and integration with other economic sector activities.

4. Emphasis is laid on an increased co-ordination of policies as well as on intensified industrial promotion in order to orient the activities of national and foreign enterprises in the desired directions.

5. The principal goals to be attained by the industrial sector are:

(a) growth rate of production;

(b) increase of employment: The manufacturing industries are expected to grow at a rate of 10.7 per cent and to absorb 197,000 labourers per year totalling 1,180,000 new employments from 1974 to 1980;

(c) expansion of exports by 19 per cent per year at least;

(d) decentralisation of industry.

The plan also proposes changes in the industrial policy for the fulfilment of the new development strategy and targets.

The proposed policy changes are covering the following instruments:

1. Indirect promotion of industry:

(a) Tariffs

(b) Import quotas

(c) Fiscal incentives

(d) Pricing of public goods

(e) Wage policy

(f) Credit policy

2. Direct promotion of industry:

(a) Regional development and promotion of small and medium industries

(b) Promotion of basic industries

(c) Promotion of technology

Thus, the "Plan Nacional de Desarrollo" has direct significance for industrial programming exercise since on the one hand, the Plan provides the overall framework for consistent sectoral programming and on the other hand, it sketches out many problems and development obstacles which have to be dealt with in greater detail in the sectoral programmes.

The targets set for the industrial sector represent the starting point for the present exercise. They may be considered to be consistent with the targets of other sectors and reflect the intentions of the Government. Nevertheless, it is necessary to check them again in greater detail and to examine if and under which conditions (and by which means) they may be realised.

1.3 The Scope of the First Industrial Programming Exercise

The shortage of time and programming capacity called for a narrow delimitation of the scope of the first programming exercise. The approach had to be less systematic and less comprehensive than would seem desirable. The collection and analysis were concentrated on manufacturing industries. The mining, electricity, petroleum industry and construction sectors have been considered only marginally. The present exercise refers to programming at the national level. Regional programming is intended to be incorporated at a later stage.

The Plan Nacional de Desarrollo emphasises the gravity of employment situation. Besides the targets of growth of production, the employment targets are therefore treated with particular attention in the industrial programming exercise.

The first step in the programming process was confined to the following activities:

(1) Projections of production, employment and capital requirements;

(2) Identification of relationships among the three variables;

(3) First approximation of an analysis of policy instruments with regard to their effects on the targets set by Presidencia;

(4) Working programme for the future programming activities and institutional requirements.

2. PROJECTIONS

2.1 Objectives and Methodological Questions

In the present exercise only two target variables are analysed: the growth rate of production and the employment. Production, as one of the key variables for any sectoral analysis, is projected first. The concept of value added is used as an indicator for the production. The values are based on 1960 prices. Based on the projection of production, the capital and manpower requirements for attaining the production targets were projected.

The industrial sector is divided into five sub-sectors and the sub-sector manufacturing industry is sub-divided into seven branches and twenty-five sub-branches.

In order to be able to terminate the exercise in time, a simplified concept of projection had to be adopted.

In general one can project the future development under three basic alternative assumptions:

(a) The changes of the factors determining the development follow the past development pattern;

(b) changes of the factors determining development take place. The changes can be anticipated and their influence on the development may be identified and reasonably quantified; or

(c) the desirable development goals can be reached with the help of specific measures considering all prevailing economic conditions and overall targets.

Case (a) represents historical trend extrapolations and can be considered as the simplest form of projection.

Case (b) is more pretentious. The main difficulties concern the identification, anticipation and quantification of the changes. Projections of this type require full information on the Government's intentions concerning changes in economic policy. Furthermore, substantial experience and data on the specific industrial branches are necessary to quantify the changes.

It is evident that projections based on the assumption of case (b) will better reflect real development than the ones based on the assumption of case (a). Case (a) in fact, represents only a special case of

Case (b), i.e., the case in which the effects of changes are zero. But it has to be emphasised that the purpose of projections based on the assumptions of (a) is not to show the real development but the development under assumed conditions.

Case (c) meets best the requirements of a development programme. Projections of this type show the desirable and feasible development and the conditions (factor requirements and necessary policy) under which it can be realised.

It is considered essential that in future projections of all the three types be made. Type (a) is a prerequisite for type (b) and type (b) for type (c).

The present stage of programming had to be limited to projections of type (a), which will serve in the future as basis for more sophisticated projections. But in spite of the restrictions made above, the results can be considered useful.

To facilitate the assessment of the results, all basic assumptions made can be listed[1/] as follows:

1. The first group of assumptions concerns continuity of physical nature. It means that the physical universe, (e.g., inanimate nature, biological species and psyche of man) will continue to be governed by the same laws as observed by empirical science in the past.

2. The second group of assumption relates to factors like technology, general knowledge, health conditions of the population, etc. It is assumed that they will change in the same pace as observed in the past.

3. The third group might be designated "general assumptions concerning social continuity". They cover the economic systems, peace or war, relationship of other countries, etc.

4. The fourth group concerns specifying conditions, which relate to magnitudes like consumption per capita, public demand, exports, etc. Such magnitudes are either specified or supposed to change in the same pace as observed in the past.

5. The last group of assumptions concerns Government policy. The projection of type (a) is made under the assumption that the Government policy does not change or that recently taken measures do not exert influence on the projected future.

1/ See Simon Kuznets: "Concepts and assumptions in long-term projections of national products". In: Long range economic projections, Princeton, 1954, pp. 17 - 23.

While some of the above assumptions are fully justified, efforts have to be made in the future to make analyses of the concerned factors and to include these findings in the projections.

One of the most important and at the same time difficult tasks of the future analysis will be to make projections of the effects of policy measures since these constitute the parameters of Government action.

In conclusion it can be said that the projections of this first programming exercise tells us how development will proceed if no changes of parameters and policies are introduced. The projections do not tell us what could be achieved if appropriate changes were introduced. Subsequent programming efforts will have to focuss on this vital issue.

2.2 Projection of production

The base of the projections are the statistics of value added for the years 1950, 1960, 1970, 1971 and 1972, available for all sub-sectors, branches and sub-branches being considered in this exercise. Apart from the sub-sector electricity, all projections represent trend extrapolations. The figures for the sub-sector manufacturing and the branches within this sub-sector are totals of the figures of their respective components (sub-branches, etc.). Slight corrections were necessary in those cases where the sum of the projections of the components differed from the projections of the totality itself.

The projection for the sub-sector electricity is based on capacity projections and differs therefore from all other projections. The historical and projected development of the value added of the secondary sector is shown in Table 2.2.1.

Taking into account the underlying assumptions, the projected development must be considered as "optimistic-minimum-development". It is called "optimistic", because it may possibly not be realised if some unexpected changes, excluded by the assumptions, take place. It is called "minimum", because it was obtained without considering any effect of measures, which may be taken. For the sake of comparison, the projections made by the "Secretaría de la Presidencia" for 1976 are also shown in the table.

Cuadro 2.2.1: El Sector Secundario

VALOR AGREGADO

Billones de pesos a precio de 1960

Denominacion	Datos Historicos				Proyecciones			
	1950	1960	1970	1971	1972	1975	1976	1982
Sector Secundario	23.5	43.9	102.1	104.1	114.6	149.0	160.8	267.6
Proyecciones de Presidencia	-	-	-	-	-	-	177.1	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	16.3 (10%)	-
1. Explotación de minas y canteras	1.8	2.3	2.8	2.9	2.9	3.0	3.1	3.5
Proyecciones de Presidencia	-	-	-	-	-	-	3.6	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	0.5 (15%)	-
2. Extracción y refinación del petróleo y fabricación derivada del carbon	2.1	5.1	12.7	13.1	14.2	18.4	20.0	34.0
Proyecciones de Presidencia	-	-	-	-	-	-	21.2	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	1.2 (6%)	-
3. Manufacturas	16.1	28.9	67.7	69.7	75.8	100.5	108.8	180.3
Proyecciones de Presidencia	-	-	-	-	-	-	117.6	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	8.8 (8%)	-
Crecimiento anual esperado - 10%	-	-	-	-	-	101.0	111.9	196.8

Denominacion	Datos Historicos				Proyecciones			
	1950	1960	1970	1971	1972	1975	1976	1982
3.1 Productos Alimenticios, Bebidas y Tabacos	5.8	10.6	19.6	19.8	20.8	27.2	28.5	43.1
Proyecciones de Presidencia	-	-	-	-	-	-	29.8	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	1.3 (4.6%)	-
a. Matanza de ganado y de aves, preparacion y conservación de carnes; fabricación y tratamiento de productos lácteos	0.6	1.2	2.2	2.3	2.6	3.0	3.2	4.7
b. Molienda de trigo y nixtamal, manufactura de productos de panadería y pasteleria, fabricación de tortillas	2.2	3.0	4.9	5.0	5.0	6.0	6.2	8.1
c. Manufactura de otros productos alimenticios	1.4	3.8	7.4	7.8	8.1	11.4	12.3	20.0
d. Elaboración de bebidas	1.0	1.9	3.8	3.4	3.8	5.5	5.5	8.0
e. Manufactura de productos de tabaco	0.6	0.7	1.4	1.3	1.4	1.7	1.8	2.3
3.2 Fabricación de Textiles, Prendas De Vestir y Productos de Cuero	4.2	5.4	11.4	12.1	13.0	14.6	15.5	21.1
Proyecciones de Presidencia	-	-	-	-	-	-	18.4	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	3.9 (18.7%)	-
a. Hilado, tejido y acabado de textiles de fibras blandas	1.5	2.1	4.8	5.1	5.6	6.3	6.6	9.4
b. Otras industrias textiles	0.4	0.6	0.6	0.6	0.6	0.6	0.7	0.7

Denominacion	Datos Historicos				Proyecciones			
	1950	1960	1970	1971	1972	1975	1976	1982
c. Fabricación de calzado, prendas de vestir y tejidos de punto	1.8	2.3	5.3	5.8	6.3	7.0	7.4	10.1
d. Industrias del cuero y productos del cuero	0.4	0.4	0.7	0.7	0.6	0.7	0.8	0.9
3.3 Productos de Madera, Fabricación de Muebles, Fabricación de Papel, Imprenta y Editorial	1.5	2.3	5.1	4.9	5.3	6.7	7.0	9.8
Proyecciones de Presidencia	-	-	-	-	-	-	8.5	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	1.5 (21.4%)	-
a. Industrias de la madera, del corcho, de papel y productos de papel	1.4	1.6	3.6	3.4	3.6	4.6	4.8	6.5
b. Imprenta, editorial e industrias conexas	0.4	0.7	1.5	1.5	1.7	2.1	2.2	3.3
3.4 Fabricación de Productos Químicos, Productos de Caucho y Material Plástico	1.2	3.2	9.1	10.1	11.4	15.8	17.6	34.8
Proyecciones de Presidencia	-	-	-	-	-	-	18.9	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	1.3 (7.4%)	-
a. Fabricación y reparación de productos de hule	0.2	0.6	1.2	1.3	1.4	1.7	1.9	3.1
b. Fabricación de productos químicos básicos, orgánicos e inorgánicos	0.1	0.4	1.3	1.4	1.5	2.2	2.5	4.0
c. Fabricación de fibras sintéticas resinas, materiales plásticos, elastomeros y hule sintético	0.1	0.3	1.4	1.7	2.1	2.9	3.4	8.0

Denominacion	Datos Historicos				Proyecciones			
	1950	1960	1970	1971	1972	1975	1976	1982
d. Fabricación y mezcla de abonos y fertilizantes e insecticidas	0.0	0.2	0.5	0.5	0.6	1.3	1.5	4.2
e. Producción de jabones, detergentes y otros productos para el lavado y aseo	0.2	0.3	0.6	0.6	0.7	0.8	0.9	1.3
f. Fabricación de productos farmacéuticos medicinales	0.3	0.8	2.0	2.2	2.5	3.2	3.5	6.0
g. Fabricación de perfumes y cosméticos y otros artículos de tocador	0.1	0.4	1.2	1.3	1.5	2.1	2.3	4.3
h. Otras industria químicas	0.1	0.3	0.9	1.0	1.1	1.5	1.6	3.0
3.5 Fabricación de Productos Minerales no Metálicos	0.6	1.2	3.0	3.2	3.6	4.4	4.8	7.8
Proyecciones de Presidencia	-	-	-	-	-	-	5.1	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	0.3 (6.2%)	-
3.6 Industrias Metálicas Basicas	0.7	1.8	4.6	4.8	5.3	7.6	8.3	15.0
Proyecciones de Presidencia	-	-	-	-	-	-	8.8	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	0.5 (6%)	-
3.7 Fabricación y Reparación de Productos Metálicos	1.8	4.3	14.8	14.9	16.2	24.2	26.7	48.7
Proyecciones de Presidencia	-	-	-	-	-	-	28.0	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	1.3 (4.9%)	-

Denominacion	Datos Historicos					Proyecciones		
	1950	1960	1970	1971	1972	1975	1976	1982
a. Fabricación y reparación de productos metálicos, excepto maquinaria y equipo de transporte	0.4	1.0	2.6	2.4	2.8	4.1	4.5	7.6
b. Construcción y reparación de maquinaria	0.3	0.5	2.4	2.5	2.6	4.1	4.5	8.8
c. Construcción y reparación de maquinaria, aparatos, acoesorios y artículos electricos	0.4	0.9	3.6	3.4	3.9	6.4	7.2	14.4
d. Construcción y reparación de equipo y material de transporte	0.2	0.5	1.2	1.8	1.3	2.1	2.3	4.3
e. Construcción de vehículos automoviles	0.2	0.6	3.4	3.6	4.0	5.2	5.7	9.7
f. Industrias manufactureras diversas	0.3	0.6	1.5	1.5	1.7	2.3	2.4	3.9
4. Construcción	3.0	6.1	13.6	13.2	15.3	19.2	20.7	32.2
Proyecciones de Presidencia	-	-	-	-	-	-	23.4	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	2.7 (13%)	-
5. Electricidad	0.5	1.5	5.3	5.8	6.4	7.8	8.2	17.5
Proyecciones de Presidencia	-	-	-	-	-	-	11.4	-
Brecha entre la proyección real y la planeada	-	-	-	-	-	-	3.2 (39%)	-

Fuente: 1. Banco de México, S.A., Informe Anual 1970 y 1971, cuadro No. 3
2. Proyecciones realizadas por el Departamento de Promoción y Programación Industrial. SIC, tomando como base los datos del Banoo de México, S.A.

The results of the two projections differ because of the different assumptions. The figures projected by the Secretaría de la Presidencia represent targets, to be realised by means of proposed policy measures. The difference, which we call "planning gap" is supposed to be bridged by this induced development.

The projection shows that the value added of the whole secondary sector may increase from 114,591 million pesos in 1972 to 267,570 million pesos in 1982 at 1960 prices. This corresponds to an average annual growth of 8.8 per cent in real terms. The comparison with the Presidencia's projection shows a planning gap of 16,300 million pesos or 10 per cent in 1976. This gap corresponds to partial gaps in all sub-sectors.

The 1976 gap in mining amounts to 15 per cent, but it is relatively insignificant considering the small share of mining within the sector. Furthermore, there is great evidence that production will grow at a higher rate - as indicated by Presidencia - owing to the recent increases in international prices of raw materials. The price increases already led to higher investments in the mining sector. Thus, because of these changes, the gap may be reduced or even closed without specific measures.

The gap in the petroleum industry is with 6 per cent relatively smaller but it is higher than the gap in the mining sector in absolute value terms: 1,200 million pesos compared with 300 million pesos.

The manufacturing gap amounts to 8 per cent corresponding to an absolute value of 8,776 million pesos. Within the manufacturing industry the branches and sub-branches grow at quite varying rates.

Fast growing branches are chemicals (12 per cent), basic metal industry (11 per cent) and metal working industries (11.5 per cent).

The fastest expanding sub-branches are: fertilizers (22 per cent), electrical machinery and apparatus (14 per cent), mechanical industry (13 per cent), synthetic resins, fibres and plastics (14 per cent), basic industries chemicals (12.7 per cent), transport equipment (12 per cent), metallic products (11 per cent) and perfumes (11 per cent).

Particularly slow growing sub-branches are: leather products (3 per cent), apparel and footwear (4.8 per cent) and tobacco (5.1 per cent).

The planning gap is very high in the cases of textile and leather (19 per cent or 2,953 million pesos) and the wood industry (20 per cent or 1,482 million pesos). It is considerable in the case of metal products (9 per cent or 1,330 million pesos).

Construction shows a gap of 13 per cent which corresponds to 2,658 million pesos. The greatest gap is found to be in electricity: 39 per cent or 3,182 million pesos.

To cover the planning gap, the secondary sector as a whole would have to grow at an average of more than 11.5 per cent. This may not be impossible, but would require a great effort and immediate action. It should also be noted that Presidencia's projections are based on results by 1970, not considering the low growth in 1971 (2.5 per cent).

Besides projecting production figures the "Plan Nacional 1974 - 1980" specifies the growth rate target for the manufacturing industry, by stating: "The manufacturing industry should grow at a rate of more than 10 per cent". Based on the estimates for 1973 this means that the value added by the manufacturing industry should reach 100,989 million in 1975, 111,087 million in 1976 and 19[illegible],800 million pesos in 1982.

The gap between the Presidencia 10 per cent growth target and the projected development is lower than the gap between the two projections (Presidencia versus SIC), but it is still considerable, especially in the longer run. It reaches 16,500 million pesos at 1960 prices in 1982.

Table 2.2.2 shows various growth rates for the secondary sector, the five sub-sectors and the main branches of the manufacturing industry.

The SIC projections led to lower growth rates than Presidencia with the exception of petroleum, food-stuffs and metal products. The generally more conservative projections by Manne show only for mining a higher rate than the projections by Presidencia. In the case of petroleum, chemicals and basic metals Manne's projections show an even lower rate than the SIC projections. The above suggested detailed branch studies will enable a better assessment of the various projections.

Cuadro 2.2.2: Tasas de Crecimiento del Valor Agregado

	Tasas Historicas		Tasas de Proyecciones		
	1950 - 1960[1]	1960 - 1970[1]	1968 - 1980[2]	1970 - 1976[1]	1972 - 1982[3]
Sector Secundario	6.7	9.0	-	9.9	8.8
1. Explotación de minas y canteras	2.3	2.2	4.5	3.9	2.3
2. Extracción y refinación del petróleo	9.3	9.5	7.2	9.0	9.2
3. Manufacturas	6.0	8.9	-	9.6	8.7
3.1 Alimentos	6.2	6.3	7.3	7.2	7.3
3.2 Textiles	2.6	7.7	7.6	8.3	5.0
3.3 Madera	3.0	8.1	7.2	8.8	6.3
3.4 Químicos	10.0	10.9	9.8	12.9	12.0
3.5 Productos minerales no metálicos	7.7	9.6	8.9	9.3	8.0
3.6 Industrias metálicas básicas	10.9	10.0	10.8	11.2	11.0
3.7 Fabricación y reparación de productos metálicos	9.0	13.2	11.5	11.2	11.5
4. Construcción	7.4	8.3	6.8	9.5	9.75
5. Electricidad	12.5	13.6	11.0	13.4	10.5

FUENTES: 1/ Grupo de Estudio del Problema del Empleo: El Problema Ocupacional en México: Magnitud y recomendaciones. México, sin año, p. 65
2/ MANNE, A.S.: DINAMICO. In: Multilevel planning; Case studies in Mexico Ed. L. Loreaux and A.S. Manne, Amsterdam, London, 1973.
3/ Cálculos del Departamento de Promoción y Programación Industrial de S.I.C.

2.3 Projection of Employment

In "full employment" models one uses mainly forecasts of the population and labour input as a point of departure, allowing for frictional unemployment and hours of work to arrive at projections of man-hours of labour input. These are then translated into projected or target levels of the gross national product, by allowance for overall productivity trends in the economy.

In countries with high unemployment it is different. In these cases one uses projections of the production and labour productivity to project the capacity of the economy to absorb labour. Projections of employment in countries with high unemployment have the purpose to show the possible absorption of labour.

The scope of the present projection is to show:

1. How many workers may or will be absorbed by the secondary sector and

2. Which are the labour intensive branches that would be able to absorb labour to a particularly large extent.

Because of the lack of data the projection is limited to the manufacturing industry which is the most important sub-sector of the secondary sector.

The projection is based on the following data:

(a) value added for 1960, 1965 and 1970;

(b) projected value added for 1975, 1976 and 1982; and

(c) employment figures for 1960, 1965 and 1970.

Table 2.3.1 shows the historical data of employment in 1960, 1965 and 1970, as well as the projections.

Cuadro 2.3.1: Ocupación y Empleo

No. de Trabajadores

Denominacion	1960[1]	1965[1]	1970[1]	1975[2]	1976[2]	1982[2]
Total de Manufacturas	905,765	1,298,738	1,506,612	1,885,553	1,971,014	2,659,292
Total de las proyecciones de las ramas	-	-	-	1,851,438	1,923,954	2,546,577
Total de las proyecciones de las sub-ramas	-	-	-	1,844,698	1,999,466	2,760,874
1. Productos alimenticios, bebidas y tabacos	238,014	335,472	379,014	487,455	503,533	696,284
Total de las proyecciones de las sub-ramas	-	-	-	(501,375)	(521,540)	(731,840)
a. Matanza de ganado y de aves, preparación de carnes, fabricación y tratamiento de productos lácteos	12,617	19,712	27,271	37,641	40,150	58,971
b. Molienda de trigo y nixtamal, manufactura de productos de panadería y pastelería, fabricación de tortillas	84,915	107,361	108,050	116,054	116,981	131,707
c. Manufactura de otros productos alimentioios	89,819	146,113	165,154	248,908	267,391	421,941
d. Elaboración de bebidas	44,342	53,650	67,851	86,207	83,841	103,359
e. Manufactura de productos de tabaco	6,321	8,636	10,689	12,565	13,177	15,862
2. Fabricación de textiles, prendas de vestir y productos de cuero	224,595	287,098	285,118	284,600	287,569	287,075
Total de las proyecciones de las sub-ramas	-	-	-	(284,905)	(294,267)	(311,895)
a. Hilado, tejido y acabado de textiles de fibras blandas	143,242	147,136	106,755	79,848	74,661	53,868
b. Otras industrias textiles	10,144	24,941	41,815	42,553	49,645	49,645

Denominacion	1960[1]	1965[1]	1970[1]	1975[2]	1976[2]	1982[2]
c. Fabricación de calzado, prendas de vestir y tejidos de punto	63,575	104,570	124,579	150,538	156,448	194,231
d. Industrias del cuero y productos del cuero	7,634	10,461	11,969	11,966	13,513	14,151
3. Productos de madera, fabricación de muebles, fabricación de papel, imprenta y editorial	90,862	139,613	166,117	198,813	204,082	251,218
Total de las proyecciones de las sub-ramas	-	-	-	(191,016)	(206,671)	(255,355)
a. Industrias de la madera, del corcho, de papel y productos de papel	57,498	90,150	109,245	128,851	132,597	164,141
b. Imprenta, editorial e industrias conexas	33,364	49,463	56,872	72,165	74,074	98,214
4. Fabricación de productos químicos, productos de caucho y material plástico	85,429	124,290	161,032	227,994	244,105	373,085
Total de las proyecciones de las sub-ramas	-	-	-	(232,771)	(253,272)	(424,870)
a. Fabricación y reparación de productos de hule	11,834	17,556	22,209	31,307	34,798	34,770
b. Fabricación de productos químicos básicos, orgánicos e inorgánicos	4,561	8,758	11,212	16,272	17,883	28,087
c. Fabricación de fibras sintéticas resinas, materiales plásticos, elastomeros y hule sintético	13,413	29,150	45,506	74,550	83,744	151,229
d. Fabricación y mezcla de abonos y fertilizantes e insecticidas	2,389	6,855	7,946	22,337	25,773	72,165
e. Producción de jabones, detergentes y otros productos para el lavado y aseo	5,690	7,055	7,738	8,024	8,537	9,580

Denominacion	1960[1/]	1965[1/]	1970[1/]	1975[2/]	1976[2/]	1982[2/]
f. Fabricación de productos farmacéuticos medicinales	22,379	39,604	32,036	37,780	38,889	46,169
g. Fabricación de perfumes y cosméticos y otros artículos de tocador	3,570	6,339	10,733	18,150	19,879	37,165
h. Otras industria químicas	20,993	18,573	23,652	24,351	23,669	25,685
5. Fabricación de productos minerales no metálicos	48,073	76,994	91,319	118,279	125,654	172,949
6. Industrias metálicas basicas	31,585	50,317	69,979	105,997	114,011	187,266
7. Fabricación y reparación de produotos metálicos	187,207	284,954	353,633	428,300	445,000	566,700
Total de las proyecciones de las sub-ramas	-	-	-	(460,355	(484,051	(676,789)
a. Fabricación y reparación de productos metálicos, excepto maquinaria y equipo de transporte	65,495	101,746	131,523	158,301	167,910	231,003
b. Construcción y reparación de maquinaria	15,194	35,343	45,213	64,669	68,389	107,579
c. Construcción y reparación de maquinaria, aparatos, accesorios y artículos electricos	38,313	77,174	88,530	119,181	126,760	182,048
d. Construcción y reparación de equipo y material de transporte	33,837	31,696	48,836	67,524	70,988	103,865
e. Construcción de vehículos automoviles	8,067	13,838	31,337	22,767	23,218	25,600
f. Industrias manufactureras diversas	26,301	25,157	28,194	27,913	26,786	26,694

Fuente: 1/ Dirección General de Estatística. SIC. Censos Industriales 1960, 1965 y 1970.
2/ Proyecciones obtenidas por el DPPI. Estos datos de obtuvieron de la siguiente manera: $\frac{\text{Valor Agregado}}{\text{Valor Agregado Empleado}}$ = Numero de empleados

The source of employment figures is the industrial census. Unfortunately, there are considerable differences between the figures of the industrial census and the population census which was used by Presidencia. The industrial census shows for the manufacturing industry a total employment of 1,506.612 in 1970 while the figure of "Censo general de población" is 2,386,680 persons.

It is not possible to fully discuss in this paper the discrepancy between the two sources. There is, however, some evidence that the industrial census is more accurate. As only the industrial census gives a detailed break-down by branches and sub-branches, this data has been used.

Based on the historical data of the value added, (table 2.3.1) and employment (table 2.3.1), the value added per employee was calculated. It is shown in table 2.3.2. The coefficients obtained are as accurate as the underlying statistics. Most of the figures show a clear tendency. In some cases however, the value added per employee diminishes from 1960 to 1965 and increases from 1965 to 1970 or shows otherwise no clear trend. Further research has to be done in order to clarify these irregularities.

The coefficients for 1975, 1976 and 1982 were then determined by trend extrapolation as far as a clear tendency was given. In irregular cases the 1970 value has been arbitrarily used for 1975, 1976 and 1982.

The projections of value added per employee has led to another interesting problem: overall projection versus projection by components, i.e. projection of value added per employee for the whole manufacturing industry versus projection by branches or sub-branches.

Cuadro 2.3.2: Valor Agregado por Empleado

Miles de Pesos por Empleado

Denominacion	1960[1]	1965[1]	1970[1]	1975[2]	1976[2]	1982[2]
Total de Manufacturas	31.9	34.5	44.9	53.3	55.2	67.8
1. Productos alimentioios, bebidas y tabacos	44.6	42.8	51.8	55.8	56.6	61.9
a. Matanza de ganado y de aves, preparación de carnes, fabricación y tratamiento de productos lácteos	92.6	76.2	79.7	79.7	79.7	79.7
b. Molienda de trigo y nixtamal, manufactura de productos de panadería y pastelería, fabricación de tortillas	35.6	33.9	45.7	51.7	53.0	61.5
c. Manufactura de otros productos alimenticios	42.4	38.0	44.7	45.8	46.0	47.4
d. Elaboración de bebidas	42.2	49.8	55.6	63.8	65.6	77.4
e. Manufactura de produotos de tabaco	117.2	115.0	128.7	135.3	136.6	145.0
2. Fabricación de textiles, prendas de vestir y produotos de cuero	24.2	26.7	40.0	51.3	53.9	73.5
a. Hilado, tejido y acabado de textiles de fibras blandas	14.4	20.0	44.8	78.9	88.4	174.5
b. Otras industrias textiles	64.5	29.3	14.1	14.1	14.1	14.1
c. Fabricación de calzado, prendas de vestir y tejidos de punto	36.8	33.6	43.0	46.5	47.3	52.0
d. Industrias del cuero y produotos del cuero	48.7	46.3	55.1	58.5	59.2	63.6

Denominacion	1960[1]	1965[1]	1970[1]	1975[2]	1976[2]	1982[2]
3. Productos de madera, fabricación de muebles, fabricación de papel, imprenta y editorial	25.8	26.8	30.8	33.7	34.3	38.1
a. Industrias de la madera, del corcho, de papel y productos de papel	28.4	29.4	33.1	35.7	36.2	39.6
b. Imprenta, editorial e industrias conexas	21.3	22.0	26.2	29.1	29.7	33.6
4. Fabricación de productos químicos, productos de caucho y material plástico	38.0	42.4	56.7	68.3	72.1	91.8
a. Fabricación y reparación de productos de hule	49.7	46.4	52.7	54.3	54.6	56.6
b. Fabricación de productos químicos básicos, orgánicos e inorgánicos	81.8	74.8	114.4	135.2	139.8	170.9
c. Fabricación de fibras sintéticas resinas, materiales plásticos, elastomeros y hule sintético	20.0	19.6	31.2	38.9	40.6	52.9
d. Fabricación y mezcla de abonos y fertilizantes e insecticidas	76.2	50.5	58.2	58.2	58.2	58.2
e. Producción de jabones, detergentes y otros productos para el lavado y aseo	51.5	57.4	80.0	99.7	104.2	135.7
f. Fabricación de productos farmacéuticos medicinales	34.0	42.3	62.4	84.7	90.0	129.9
g. Fabricación de perfumes y cosméticos y otros artículos de tocador	119.6	104.1	115.7	115.7	115.7	115.7
h. Otras industrias químicas	15.9	30.1	39.3	61.6	67.7	116.8

Denominacion	1960 1/	1965 1/	1970 1/	1975 2/	1976 2/	1982 2/
5. Fabricación de productos minerales no metálicos	24.6	22.4	32.6	37.2	39.2	45.1
6. Industrias metálicas básicas	56.5	58.6	66.2	71.7	72.8	80.1
7. Fabricación y reparación de productos metálicos	22.8	31.7	41.8	56.5	60.0	86.0
a. Fabricación y reparación de productos metálicos, excepto maquinaria y equipo de transporte	15.5	16.7	21.8	25.9	26.8	32.9
b. Construcción y reparación de maquinaria	36.7	41.0	52.9	63.4	65.9	81.8
c. Construcción y reparación de maquinaria, aparatos, accesorios y artículos electricos	23.4	30.8	40.7	53.7	56.8	79.1
d. Construcción y reparación de equipo y metrial de transporte	16.7	26.4	25.3	31.1	32.4	41.4
e. Construcción de vehículos automoviles	77.3	116.0	159.1	228.4	245.5	378.9
f. Industrias manufactureras diversas	23.7	42.4	54.3	82.4	89.6	146.1

FUENTE: 1/ Cálculos del Departamento de Promoción y Programación Industrial, tomando como base para los datos del valor agregado, los Informes Anuales del Banco de México, y para los datos sobre la mano de obra, los Censos Industriales respectivos.

2/ Proyección de los datos históricos tomanco en consideración tendencias de la forma $K_{75} = K_{70}\cdot(1+r)^5$ y $K_{80} = K_{70}\cdot(1+r)^{10}$

$K_{76} = K_{70}\,(1+r)^6$

To better understand the problem, the implicit assumptions of any projections, based on the past growth trends, are recalled:

(a) It is assumed that past rates of changes in the real volume of capital and equipment per worker will not change;

(b) The shifting distribution of man-hours employed among industries is assumed to continue to have the same net effect on overall productivity;

(c) It is assumed that th rate of increase in real intangible investment (research, etc.) per unit of factor input will not change. This assumption means that the technical progress does not alter its tendency.

Considering these assumptions it becomes obvious that projection of produotivity disaggregated as far as possible would substantially contribute to refining the economic projections.

In this exercise, productivity projections were made both for individual industries (sub-branches) to project the employment of these very industries and for higher aggregates like branches and the sub-sector to project their respective employment. No aggregate of productivity projections was made of sub-branches to project the employment of higher aggregates. Such an aggregate should, however, be used at a later stage when more is known about the development of the industrial structure.

The consequences of using different productivity projections are differences between the projection of employment for the sub-sector, respeotively branches, on the one hand and the sum of the projection for the branches, resp. sub-branches, on the other hand. The different results are also shown in Table 2.3 1.

Aocording to our projections the employment of the manufacturing industry will reach 1,882,000 in 1975, 1,967,000 in 1976 and 2,647,000 in 1982, increasing at a rate of between 4.5 and 5 per cent. Up to 1975 and 1976 only about 85,000 new employment opportunities will be oreated. By 1982 this figure will reach about 130,000.

This result requires serious consideration. Only if the assumption that the industrial census is substantially wrong and the population census right, the results will change in so far as the projected employment increase of 5 per cent will refer to a higher base. If

productivity follows the development registered during the last five years, the result may, however, be even worse. The productivity might increase at a rate of 5 per cent, which would reduce the rate of increase of employment to some 3.5 per cent. The "Plan Nacional" however, considers an increase of employment in the manufacturing industries of 5.9 per cent or 197,000 per annum. From 1974 to 1980 about 1,180,000 new employments should be created. Our projections show that from 1976 to 1982 only 680,000 new employments will be created.

The target lies consequently far beyond our projections. As regards the average rate of increase, the gap is about 20 per cent, but as for the absolute increase, the gap is about 100 per cent.

The secondary sector is expected to absorb more and more labour in the future. But to create employment in the secondary sector is normally more difficult than in the two other sectors, mainly because of the relatively high requirements in capital per employee and because skill constraints can only be solved in a long-term programme. In a short-term programme the quality of labour has to be considered as given and technology has to be adapted. Of course, possibilities to create employment for unskilled labour are limited.

The capital constraints may be eased by orienting the development in the direction of labour intensive industries, through appropriate policy measures.

In order to identify the labour intensive industries, table 2.3.3 was established. It shows the net capital invested per employee for 1960, 1965 and 1970 compared by means of historical data. The figures for 1975 and 1980 represent trend extrapolations.

Cuadro 2.3.3: Capital Invertido Liquido por Empleado

Mile pesos por empleado

Denominacion	1960	1965	1970	1975	1980
Total de Manufacturas	51.0	69.0	98.8	138.6	189.6
1. Productos alimenticios, bebidas y tabacos	53.5	64.2	88.1	111.6	144.5
a. Matanza de ganado y de aves, preparación de carnes, fabricación y tratamiento de productos lácteos	55.6	68.6	79.7	-	-
b. Molienda de trigo y nixtamal, manufactura de productos de panadería y pastelería, fabricación de tortillas	28.5	37.3	45.7	56.9	70.4
c. Manufactura de otros productos alimenticios	59.4	72.2	89.4	114.5	131.9
d. Elaboración de bebidas	76.0	94.6	133.4	178.6	233.6
e. Manufactura de productos de tabaco	128.9	126.5	154.4	175.9	183.7
2. Fabricación de Textiles, prendas de vestir y productos de cuero	38.7	45.4	68.0	92.3	119.0
a. Hilado, tejido y acabado de textiles de fibras blandas	50.4	53.0	98.6	-	-
b. Otras industrias textiles	70.9	64.5	86.0	-	-
c. Fabricación de calzado, prendas de vestir y tejidos de punto	14.7	20.2	38.7	60.4	100.4
d. Industrias del cuero y productos del cuero	24.3	41.7	66.1	111.1	180.7

Denominacion	1960	1965	1970	1975	1980
3. Productos de Madera, Fabricación de muebles, fabricación de Papel, Imprenta y Editorial	46.4	59.0	80.1	104.5	136.2
a. Industrias de la madera, del corcho, de papel y productos de papel	51.1	61.7	82.7	103.5	135.1
b. Imprenta, editorial e industrias conexas	36.2	52.8	73.4	104.8	148.1
4. Fabricación de productos químicos, productos de caucho y material plástico	72.2	110.2	153.1	221.8	321.5
a. Fabricación y reparación de productoe de hule	74.5	74.2	79.0	-	-
b. Fabricación de productos químicos básicos, orgánicos e inorgánicos	98.2	179.5	240.2	378.6	592.0
c. Fabricación de fibras sintéticas resinas, materiales plásticos, elastomeros y hule sintético	84.0	92.1	149.8	198.4	267.8
d. Fabricación y mezcla de abonoe y fertilisantes e insecticidas	99.1	272.7	366.7	-	-
e. Producción de jabones, detergentes y otros productos para el lavado y aseo	87.5	126.3	168.0	229.3	323.2
f. Fabricación de productos farmacéuticos medicinalee	57.8	105.7	162.2	271.0	458.0
g. Fabricación de perfumes y cosméticos y otros artículos de tocador	23.9	83.3	92.6	-	-
h. Otras industria químicas	79.5	102.3	129.7	-	-

Denominacion	1960	1965	1970	1975	1980
5. Fabricación de productos minerales no metálicos	59.0	65.0	106.9	145.1	192.1
6. Industrias metálicas basicas	135.6	187.5	211.8	265.3	333.7
7. Fabricación y reparación de productos metálicos	38.8	69.7	96.1	152.5	237.5
a. Fabricación y reparación de productos metálicos, excepto maquinaria y equipo de transporte	34.1	45.1	74.1	108.8	159.6
b. Construcción y reparación de maquinaria	40.4	69.7	111.1	183.9	304.8
c. Construcción y reparación de maquinaria, aparatos, accesorios y artículos electricos	44.5	64.7	89.5	128.9	177.0
d. Construcción y reparación de equipo y material de transporte	16.7	95.0	113.8	298.6	773.7
e. Construcción de vehículos automoviles	115.9	278.9	222.7	-	-
f. Industrias manufactureras diversas	47.4	38.2	76.0	-	-

Based on the results for 1970, the most labour intensive industries are:

1. Apparel and footwear
2. Grain mills and baking products
3. Leather products
4. Publishing
5. Metallic products except machinery and transport equipment
6. Other manufacturing industries
7. Rubber products
8. Slaughtering and processing of meat.

They contributed in 1970 about 30 per cent to the total value added of manufacturing industries, employed about 33 per cent of the labour force and used about 20 per cent of the capital of the sector.

The most capital intensive industries are:

1. Fertiliser and pesticides
2. Basic industrial chemicals
3. Assembly of automotives
4. Basic metallic industries
5. Soaps, detergents and other cleaning materials
6. Drugs and medicines
7. Tobacco
8. Synthetic resins, synthetic fibres, plastics and synthetic rubber
9. Beverages

Their share in value added of manufacturing industries amount to about 28 per cent, but they employ 18 per cent of the labour force only and use about 33 per cent of the capital stock of the sector. It is quite evident that employment policy will favour the development of labour intensive industries. The employment effect of an equal amount of investment in those industries will be several times as high as in the capital intensive branches.

Though from the point of view of employment, promotion of labour intensive industries must be considered as evident and desirable, the overall economic impact must not be neglected, i.e., the impact on the total growth rate, on the price of manufactured goods, etc.

Employment policy implies that the social costs and benefits of the employment policy should balance. It would generally be a good solution if the market mechanism led to a situation in which labour intensive industries prove to be more profitable than the capital intensive ones. Such conditions could lead to a considerable increase in employment at low wages. From the point of view of an overall development strategy, important capital intensive industries will also have to be developed but the emphasis should be placed on creating more employment.

2.4 Projection of Capital Requirements

The present analysis is limited to the estimation of a capital-output ratio and the following computation of capital requirements.

First an average capital-output ratio was computed for 1960, 1965 and 1970, the only years for which quite homogenous and reliable data were available. On the one hand we used the magnitude "capital invertido neto" of the industrial census, which has been available for the whole manufacturing industry, divided into seven branches and twenty-five sub-branches. It represents the book value per 31 December of the respective years of

(a) fixed assets and

(b) current assets

which are property of the companies and of which all reserves were deducted. On the other hand we used the value added shown in table 2.2.1.

The calculation of the capital-output ratio for 1960, 1965 and 1970 is shown in table 2.4.1.

With few exceptions the ratio shows a clear and steady increase from 1960 to 1970. The average ratio for the total manufacturing industries increases from 1.6 in 1960 to 2.0 in 1965 and 2.2 in 1970.

The average co-efficient of the branches 1 and 2 is low (under the average), branch 7 (metallic products) lies with 2.3 slightly above the average.

Cuadro 2.4.1: Inversion de capital liquido en relación al valor agregado

(Millones de pesos)

Denominacion	1960			1965			1970		
	Inversiones de capital	Valor Agregado	Relación 2:1	Inversiones de capital	Valor Agregado	Relación 2:1	Inversiones de capital	Valor Agregado	Relación 2:1
Total de Manufacturas	46,996	28,892	1.6	91,303	44,761	2.0	149,896	67,680	2.2
	-	-	-	46,906	28,892	-	91,303	44,761	-
Valores marginales	-	-	-	44,397	15,869	2.78	58,593	22,919	2.55
1. Productos alimenticios, bebidas y tabacos	12,370	10,620	1.2	21,974	14,363	1.5	32,751	19,644	1.7
	-	-	-	12,870	10,620	-	21,974	14,368	-
Valores marginales	-	-	-	9,104	3,748	2.43	10,777	5,276	2.03
a. Matanza de ganado y de aves, preparación de carnes, fabricación y tratamiento de productos lácteos	743	1,169	0.6	1,399	1,502	0.9	2,187	2,174	1.0
b. Molienda de trigo y nixtamal, manufactura de productos de panadería y pastelería, fabricación de tortillas	2,403	3,027	0.8	3,876	3,041	1.1	4,819	4,937	1.0
c. Manufactura de otros productos alimenticios	5,440	3,811	1.4	10,451	5,559	1.9	14,931	7,337	2.0
d. Elaboración de bebidas	3,444	1,872	1.8	5,190	2,673	1.9	9,138	3,770	2.4
e. Manufactura de productos de tabaco	840	741	1.1	1,058	993	1.1	1,683	1,376	1.2

Denominacion	1960			1965			1970		
	Inversiones de capital	Valor Agregado	Relación 2:1	Inversiones de capital	Valor Agregado	Relación 2:1	Inversiones de capital	Valor Agregado	Relación 2:1
2. **Fabricación de textiles, prendas de vestir y productos de cuero**	8,890	5,434	1.6	12,809	7,671	1.7	19,747	11,[illegible]	1.[illegible]
	-	-	-	8,890	5,434	-	12,[illegible]	7,[illegible]	-
Valores marginales	-	-	-	3,914	2,237	1.75	[illegible],343	3,[illegible]	1.[illegible]
a. **Hilado, tejido y acabado de textiles de fibras blandas**	7,160	2,067	3.5	8,652	2,944	2.9	10,4[illegible]	4,[illegible]	[illegible]
b. **Otras industrias textiles**	638	654	1.1	1,579	731	2.2	3,[illegible]	[illegible]	[illegible]
c. **Fabricación de calzado, prendas de vestir y tejidos de punto**	828	2,341	0.4	2,155	3,512	0.6	4,[illegible]	5,35[illegible]	0.[illegible]
d. **Industrias del cuero y productos del cuero**	204	372	0.5	418	484	0.9	[illegible]	[illegible]	1.[illegible]
3. **Productos de madera, fabricación de muebles, fabricación de papel, imprenta y editorial**	4,163	2,347	1.8	8,164	3,743	2.2	13,351	5,110	[illegible]
	-	-	-	4,163	2,347	-	8,164	[illegible]	-
Valores marginales	-	-	-	4,000	1,400	[illegible]	5,200	[illegible]	[illegible]
a. **Industrias de la madera, del corcho, de papel y productos de papel**	2,973	1,635	1.8	5,595	2,655	2.1	9,[illegible]	3,021	[illegible]
	-	-	-	2,973	1,635	-	5,[illegible]	2,655	-
	-	-	-	2,612	1,020	2.55	3,[illegible]	[illegible]	[illegible]
b. **Imprenta, editorial e industrias conexas**	1,190	712	1.7	2,519	1,088	2.4	4,174	1,[illegible]	[illegible]

Denominacion	1960			1965			1970		
	Inversiones de capital	Valor Agregado	Relación 2:1	Inversiones de capital	Valor Agregado	Relación 2:1	Inversiones de capital	Valor Agregado	Relación 2:1
4. Fabricación de productos químicos, productos de caucho y material plástico	6,344	3,245	1.9	13,898	5,274	2.6	24,820	9,128	2.7
	-	-	-	6,344	3,245	-	13,898	5,274	-
Valores marginales	-	-	-	7,554	2,029	3.75	10,922	3,914	2.7
a. Fabricación y reparación de productos de hule	882	588	1.5	1,293	814	1.6	1,765	1,171	1.5
b. Fabricación de productos químicos básicos, orgánicos e inorgánicos	451	373	1.2	1,544	655	2.4	2,744	1,284	2.1
c. Fabricación de fibras sintéticas resinas, materiales plásticos, elastomeros y hule sintético	1,135	268	4.2	2,695	572	4.7	6,757	1,421	4.8
d. Fabricación y mezcla de abonos y fertilizantes e insecticidas	242	182	1.3	1,885	346	5.4	2,921	463	6.3
e. Producción de jabones, detergentes y otros productos para el lavado y aseo	518	293	1.7	910	405	2.2	1,311	619	2.1
f. Fabricación de productos farmacéuticos medicinales	1,343	781	1.7	3,119	1,251	2.5	5,229	2,000	2.6
g. Fabricación de perfumes y cosméticos y otros artículos de tocador	107	427	0.2	507	660	0.8	1,046	1,242	0.8
h. Otras industria químicas	1,666	333	5.0	1,945	571	3.4	3,047	979	3.3
5. Fabricación de productos minerales no metálicos	2,832	1,182	2.4	5,073	1,727	2.9	9,789	2,964	3.3
	-	-	-	2,832	1,182	-	5,073	1,727	-
Valores marginales	-	-	-	2,241	545	4.1	4,716	1,237	3.85

Denominacion	1960			1965			1970		
	Inversiones de capital	Valor Agregado	Relación 2:1	Inversiones de capital	Valor Agregado	Relación 2:1	Inversiones de capital	Valor Agregado	Relación 2:1
6. **Industrias metálicas basicas**	4,347	1,786	2.4	9,437	2,949	3.2	14,792	4,636	3.2
	-	-	-	4,347	1,786	-	9,487	2,949	-
Valores marginales	-	-	-	5,140	1,163	4.4	5,305	1,687	3.1
7. **Fabricación y reparación de productos metálicos**	7,410	4,278	1.7	19,953	9,029	2.2	34,675	14,831	2.3
	-	-	-	7,410	4,278	-	19,953	9,029	-
Valores marginales	-	-	-	12,543	4,751	2.65	14,723	5,802	2.55
a. **Fabricación y reparación de productos metálicos, excepto maquinaria y equipo de transporte**	2,260	1,019	2.2	4,666	1,696	2.7	9,130	2,646	3.4
b. **Construcción y reparación de maquinaria**	626	558	1.1	2,449	1,449	1.7	5,015	2,330	2.1
c. **Construcción y reparación de maquinaria, aparatos, accesorios y artículos electricos**	1,729	896	1.9	5,022	2,374	2.1	8,094	3,605	2.2
d. **Construcción y reparación de equipo y material de transporte**	564	557	1.0	3,054	838	3.6	5,510	1,235	4.5
e. **Construcción de vehículos automoviles**	959	624	1.5	3,537	1,605	2.4	4,733	3,394	1.4
f. Industria manufactureras diversas	1,272	624	2.0	933	1,067	0.9	2,134	1,531	1.4

Fuentes: VII Censo Industrial 1961. Table No. 3, first part. VIII Censo Industrial 1966. Table No. 3.
Avance al Resúmen General del IX Censo Industrial 1971. Table 3.
En algunos casos la rama economica comprende sub-grupos o clases.
Manufactura no incluye extracción de petróleo, gas natural, carbon o minería.
Representa el valor contable (neto de todas las reservas acumuladas a ese día) al 31 de diciembre 19[illegible], efectivo, haberes fijos y deferidos, de los establecimientos.

Table 2.4.2 contains additionally the projected co-efficients for 1975, 1976, 1980 and 1982. It shows that the average co-efficient of the total manufacturing industry arises to 2.6 in 1975 - 1976 and 3.2 in 1982.

The projections of the ratio for some sub-branches seems to be irrealistic and further detailed investigations are necessary. These sub-branches are:

2.b. Other textile industries

4.d. Fertilizers

7.d. Transport equipment

The remaining projections seem to be reasonable, but there is no doubt that the whole complex capital-output ratio needs further research and continuous improvement.

Cuadro 2.4.2: Capital Invertido Neto por Valor Agregado

Denominacion	1960[1/]	1965[1/]	1970[1/]	1975[2/]	1976[2/]	1980[2/]	1982[2/]
Total de Manufacturas	1.6	2.0	2.2	2.6	2.6	3.0	3.2
1. Productos Alimenticios, bebidas y tabacos	1.2	1.5	1.7	2.0	2.1	2.4	2.6
a. Matanza de ganado y de aves, preparación y conservación de carnes, fabricación y tratamiento de productos lácteos	0.6	0.9	1.0	1.3	1.3	1.7	1.8
b. Molienda de trigo y de nixtamal, manufactura de productos de panadería y pastelería, fabricación de tortillas	0.8	1.1	1.0	1.1	1.1	1.2	1.3
c. Manufactura de otros prodoctos alimenticioe	1.4	1.9	2.0	2.5	2.9	2.3	4.2
d. Elaboración de bebidas	1.8	1.9	2.4	2.8	2.8	3.2	3.4
e. Manufactura de productos de tabaco	1.1	1.1	1.2	1.3	1.3	1.3	1.3
2. Fabricación de Textiles, prindas de vestir y productos de cuero	1.6	1.7	1.7	1.8	1.8	1.8	1.8
a. Hilado, tejido y acabado de textiles de fibras blandas	3.5	2.9	2.2	2.2	2.2	2.2	2.2
b. Otras industrias textiles	1.1	2.2	6.1	14.3	17.1	33.8	47.7
c. Fabricación de calzado, prendas de vestir y tejidos de punto	0.4	0.6	0.9	1.3	1.5	2.0	2.4
d. Industrias del cuero y productos del cuero	0.5	0.9	1.2	1.9	2.0	2.9	3.4

Denominacion	1960[1/]	1965[1/]	1970[1/]	1975[2/]	1976[2/]	1980[2/]	1982[2/]
3. Productos de madera, fabricación de muebles, fabricación de papel, imprenta y editorial	1.8	2.2	2.6	3.1	3.2	3.7	4.0
a. Industrias de la madera y del corcho, fabricación del papel y productos de papel	1.8	2.1	2.5	2.9	3.0	3.5	3.7
b. Imprenta, editorial e industrias conexas	1.7	2.4	2.8	3.6	3.8	4.6	5.1
4. Fabricación de productos químicos, productos de caucho y material plástico	1.9	2.6	2.7	3.2	3.3	3.8	4.1
a. Fabricación y reparación de productos de hule	1.5	1.6	1.5	1.5	1.5	1.5	1.5
b. Fabricación de productos químicos básicos, orgánicos e inorgánicos	1.2	2.4	2.1	2.8	2.9	3.7	4.1
c. Fabricación de fibras sintéticas, materiales plásticos, elastómeros y hule sintético	4.2	4.7	4.8	5.1	5.2	5.5	5.6
d. Fabricación y mezcla de abonos y fertilizantes y de insecticidas	1.3	5.4	6.3	13.9	16.2	30.5	41.9
e. Fabricación de jabones, detergentes y otros productos para el lavado y aseo	1.7	2.2	2.1	2.3	2.4	2.6	2.7
f. Fabricación de productos farmacéuticos medicinales	1.7	2.5	2.6	3.2	3.4	4.0	4.3
g. Fabricación de perfumes, cosméticos y otros artículos de tocador	0.2	0.8	0.8	1.6	1.8	3.2	4.2
h. Otras industrias químicas	5.0	3.4	3.3	3.3	3.3	3.3	3.3

Denominacion	1960 1/	1965 1/	1970 1/	1975 2/	1976 2/	1980 2/	1982 2/
5. Fabricación de productos de minerales no metálicos	2.4	2.9	3.3	3.9	4.0	4.5	4.8
6. Industrias metálicas basicas	2.4	3.2	3.2	3.7	3.8	4.[illegible]	4.5
7. Fabricación y reparación de productos metálicos	1.7	2.2	2.3	2.7	2.8	3.1	3.3
a. Fabricación y reparación de productos metálicos, excepto maquinaria y equipo de transporte	2.2	2.7	3.4	4.2	4.4	5.2	5.9
b. Construcción y reparación de maquinaria	1.1	1.7	2.1	2.9	3.1	4.0	4.6
c. Construcción y reparación de maquinaria, aparatos, accesorios y artículos eléctricos	1.9	2.1	2.2	2.4	2.4	2.5	2.6
d. Construcción y reparación de equipo y material de transporte	1.0	3.6	4.5	9.6	11.1	20.[illegible]	27.5
e. Construcción de vehículos automóviles	1.5	2.4	1.4	1.4	1.4	1.4	1.4
f. Industrias manufactureras diversas	2.0	0.9	1.4	1.4	1.4	1.4	1.4

FUENTE: 1/ (Capital invertido neto: Censos Industriales 1960, 1965, 1970.
(Valor Agregado. Informe Anual del Banco de México, S.A., 1960, 1965 y 1970
2/ Proyecciones realisadas por el DPPI. SIC.

In another step the marginal capital output ratio was estimated by using the differences between the capital stocks (see our above definition) of 19[illegible] and 19[illegible], respectively 19[illegible] and 19[illegible] on the one hand and the differences of value added of the respective years on the other hand.

The result is somewhat surprising. The coefficient for the total manufacturing industry drops from [illegible] for 19[illegible] - 19[illegible] to [illegible] for 19[illegible] - 19[illegible]. The development of the marginal capital-output ratio of the various branches and sub-branches is not uniform either; some increase others decrease. Further studies are needed to clarify this matter.

The capital requirements are shown in table 2.4.3. The requirements were projections of table 2.[illegible] and represent therefore a kind of minimum requirement. The calculation was done in three different ways:

(a) globally for the manufacturing industry

(b) summing up the branch projections, and

(c) summing up the sub-branch projections

The three methods led to three different results. The lowest result was received for the global projection, the highest for the sum of the sub-branches projections. The variations will have to be checked in more detail at a later stage.

According to table 2.4.3 a minimum investment of 21.58 billions of pesos is necessary in 1976 and of 294.08 billions of pesos from 1976 to 1982 for the manufacturing industry alone.

In this calculation no time lag is considered explicitly, because it may be assumed that the historical data, based on which our coefficient were completed, include also capital, which not yet led to a capacity effect during the respective year so that, in fact, the ratio calculated for a certain year considers the lag in itself. But this problem has to be taken up again in more detail.

Cuadro 2.4.3: Requerimientos de Capital

Millones de Pesos

Denominacion	1960[1]	1965[1]	1970[1]	1975[2]	1976[2]	1982[2]
Total de Manufacturas	46,906	91,303	149,896	261,300	283,850	576,960
Total de las proyecciones de las ramas	-	-	-	262,630	293,130	597,570
Total de las proyecciones de las sub-ramas	-	-	-	292,750	340,540	722,800
1. Productos alimenticios, bebidas y tabacos	12,870	21,974	32,751	54,400	59,850	112,060
Total de las proyecciones de las sub-ramas	-	-	-	(56,610)	(64,390)	(133,180)
a. Matanza de ganado y de aves, preparación de carnes, fabricación y tratamiento de productos lácteos	743	1,399	2,187	3,900	4,160	8,420
b. Molienda de trigo y nixtamal, manufactura de productos de panadería y pastelería, fabricación de tortillas	2,403	3,876	4,812	6,600	6,820	10,530
c. Manufactura de otros productos alimenticios	5,440	10,451	14,931	28,500	35,470	84,000
d. Elaboración de bebidas	3,444	5,190	9,138	15,400	15,400	27,200
e. Manufactura de productos de tabaco	840	1,058	1,683	2,010	2,340	2,990
2. Fabricación de textiles, prendas de vestir y productos de cuero	8,890	12,804	19,747	26,280	27,900	37,980
Total de las proyecciones de las sub-ramas	-	-	-	(30,870)	(33,130)	(81,370)
a. Hilado, tejido y acabado de textiles de fibras blandas	7,160	8,652	10,426	13,860	14,520	20,680
b. Otras industrias textiles	698	1,579	3,601	8,580	11,470	33,390

Denominacion	1960[1]	1965[1]	1970[1]	1975[2]	1976[2]	1982[2]
c. Fabricación de calzado, prendas de vestir y tejidos de punto	828	2,155	4,921	9,100	11,100	24,240
d. Industrias del cuero y productos del cuero	204	418	799	1,330	1,600	3,060
3. Productos de madera, fabricación de muebles, fabricación de papel, imprenta y editorial	4,163	8,164	13,351	20,770	22,400	39,200
Total de las proyecciones de las sub-ramas	-	-	-	(20,900)	(22,760)	(40,880)
a. Industrias de la madera, del corcho, de papel y productos de papel	2,973	5,585	9,177	13,340	14,400	24,050
b. Imprenta, editorial e industrias conexas	1,190	2,579	4,174	7,560	8,360	16,830
4. Fabricación de productos químicos, productos de caucho y material plástico	6,344	13,898	24,820	50,560	58,080	142,680
Total de las proyecciones de las sub-ramas	-	-	-	(61,960)	(75,560)	(302,380)
a. Fabricación y reparación de productos de hule	882	1,293	1,765	2,550	2,850	4,650
b. Fabricación de productos químicos básicos, orgánicos e inorgánicos	451	1,544	2,744	6,160	7,250	19,680
c. Fabricación de fibras sintéticas resinas, materiales plásticos, elastomeros y hule sintético	1,135	2,695	6,757	14,790	17,680	44,800
d. Fabricación y mezcla de abonos y fertilizantes e insecticidas	242	1,885	2,921	18,070	24,300	175,980
e. Producción de jabones, detergentes y otros productos para el lavado y aseo	518	910	1,311	1,840	2,160	3,510

Denominacion	1960 1/	1965 1/	1970 1/	1975 2/	1976 2/	1982 2/
f. Fabricación de productos farmacéuticos medicinales	1,343	3,119	5,229	10,240	11,900	25,800
g. Fabricación de perfumes y cosméticos y otros artículos de tocador	107	507	1,046	3,360	4,140	18,060
h. Otras industrias químicas	1,666	1,945	3,047	4,950	5,280	9,900
5. Fabricación de productos minerales no metálicos	2,882	5,073	9,759	17,160	19,200	37,440
6. Industrias metálicas basicas	4,347	9,437	14,792	28,120	31,540	67,500
7. Fabricación y reparación de productos metálicos	7,410	19,953	34,676	65,340	74,760	160,710
Total de las proyecciones de las sub-ramas	-	-	-	(75,130)	(87,900)	(260,050)
a. Fabricación y reparación de productos metálicos, excepto maquinaria y equipo de transporte	2,260	4,668	9,130	17,220	19,800	44,340
b. Construcción y reparación de maquinaria	626	2,449	5,015	11,890	13,950	40,480
c. Construcción y reparación de maquinaria, aparatos, accesorios y artículos eléctricos	1,729	5,022	8,094	15,360	17,280	37,440
d. Construcción y reparación de equipo y material de transporte	564	3,054	5,570	20,160	25,530	118,250
e. Construcción de vehículos automoviles	959	3,827	4,733	7,280	7,980	13,580
f. Industrias manufactureras diversas	1,272	933	2,134	3,220	3,360	5,460

Fuente: 1/ Dirección General de Estadística, SIC. Censos Industriales de 1960, 1965 y 1970.
2/ Proyecciones obtenidas por el DPPI. SIC., en base a los siguiente: $\frac{\text{Capital Invertido Neto}}{\text{Valor Agregado}} \times \text{Valor Agregado} = \text{Capital Invertido Neto}$

3. POLICY INSTRUMENTS

An industrial development programme is expected to facilitate national decisions in economic policy. Therefore it should not only show industrial inter-relationships and resource requirements to fulfil certain targets, but it should also show the relationship between the development targets and the economic policy. The latter is probably the most difficult task of programming.

In this connexion the UNIDO report "Industrial Protection in Mexico" (29 May 1974) should be referred to as a basic document on policies, in particular protection policies. Its Part I describes the existing set of policy measures.

In this present exercise only preliminary work could be done in this field. The work had to be limited to indicating some of the problems and systematising these for future analysis.

First, it is proposed that a simple device be elaborated which will facilitate the analysis: a matrix, in which the development targets are inserted in the columns and the policy instruments in the lines. The relationship between targets and instruments may then be shown more easily.

In a second step the actual industrial policy may be analysed by means of this matrix. In a third step the continuously improved and completed instrument-target-matrix may be used to elaborate proposals for changes in the industrial policy.

The first list of targets is extracted from the "Plan Nacional de Desarrollo". The list is probably not complete and the order does not necessarily reflect Government priorities. The targets indicated in the "Plan" are:

1. **Full employment**
2. **Growth of production**
3. **Improvement of balance of payments**
4. **Improvement of economic independence**
5. **Decentralisation**
6. **Better distribution of income**

7. Improvement of efficiency

8. Increase of the rate of investment

9. Price stability

At a later stage of programming the targets will have to be analysed in depth to show the rate of the interrelationship and consistency between these targets and to investigate the role of various industries in attaining them.

The list of instruments is compiled according to common classification. A more complete list would have to be prepared in the future. The list of instruments contains homogenous measures, which may be taken by the Government to reach certain targets. For some instruments further splitting might become desirable at a later stage. At present we do not distinguish either between positive and negative changes, but list only the instrument. Instead of distinguishing for instance, between devaluation and revaluation, only the instrument "Exchange rate" is listed.

The proposed analytical list of instruments reads:

A. Fiscal policy instruments

1. Public expenditures

a. Public investment
b. Subsidies
c. Other expenditures

2. Public revenues

d. Direct taxes
e. Indirect taxes
f. Tariffs
g. Other revenues

B. Monetary and credit policy instruments

h. Public credits
i. Open market operations
j. Bank discount rate
k. Other interest rate instruments
l. Minimum reserve
m. Other credit instruments
n. Credit control

C. Foreign exchange rate

o. Foreign exchange rate

D. Instruments of direct control

p. Control of private imports
q. Foreign exchange control
r. Price control
s. Wage control
t. Investment control
u. Raw material control
v. Control of production
x. Other controls

E. Institutional changes

y. Changes of conditions of competition
z. Establishment of new institutions

The following matrix is made at this stage for illustrative purposes only. The matrix (table 3.1) shows which targets are affected by each instrument. It should be noted that while most targets are more or less affected by most policy instruments, the matrix should bring out only the most dominant relationships. The material has to be completed and improved in the future programming work. Special progress may be expected from the efforts of quantifying the relationships. The matrix should reflect the Mexican situation as accurately as possible.

The next step for building up the matrix will be to analyse the actual policy instruments and to establish a separate matrix for each instrument complex. An example may illustrate the intention. The "Programas de Fabricación" represent such an instrument complex in which several instruments are used simultaneously. The instrument of private import control is used to guarantee a place in the Mexican (home) market. At the same time there is the assurance for obtaining permits for importing parts and components not available in Mexico by means of the instrument of import control. Furthermore the enterprise is ensured of obtaining import duty reductions on machinery and equipment as well as spare parts by means of the tariff instrument.

The targets are to increase Mexican production while avoiding excessive price increases.

The described approach for a detailed analysis of the economic policy can be expected to provide some help for an accurate evaluation of the present economic policy and would form the basis for rationally conceiving a new policy approach to solve prevailing development problems.

Table 3.1: Instrument-Target-Matrix

Instruments \ Targets	1. Full employment	2. Growth of production	3. Improvement of balance of payments	4. Improvement of economic independence	5. Decentralisation	6. Better distribution of income	7. Improvement of efficiency	8. Increase of the rate of investment	9. Stability
a. Public investment	X	X	X	X	X	X		X	X
b. Subsidies	X	X	X		X	X			X
c. Other expenditures (to be specified)									
d. Direct taxes	X	X	X		X	X			X
e. Indirect taxes	X		X						X
f. Tariffs	X		X				X		X
g. Other revenues (to be specified)									
h. Public credits	X	X			X	X			X
i. Open market operations	X	X							X
j. Bank discount rate	X	X	X						X
k. Other interest rate instruments (to be specified)									
l. Minimum reserve	X	X	X						X
m. Other credit instruments (to be specified)									
n. Credit control	X	X							X
o. Foreign exchange rate			X						X
p. Control of private imports	X	X	X	X			X		
q. Foreign exchange control			X						
r. Price control	X	X	X				X		X
s. Wage control	X	X	X			X			X
t. Investment control	X	X	X	X	X	X			X
u. Raw material control	X	X	X	X	X	X			
v. Control of production	X	X	X	X	X		X		X
x. Other controls (to be specified)									
y. Changes of conditions of competition			X	X	X	X			X
z. Establishment of new institutions					X		X		

ANNEX I

Industrial Programming in the Future

1. The need for continued action

Industrial programming aims at enabling the Government to make rational policy decisions for achieving long-term objectives. Simultaneously, and in addition to the direct policy effects on private investment decisions, the outlining of desired long-term development in a published form may have a guiding effect on the private sector. The industrial programming exercise is to serve as a platform for mapping out long-term development constellations and for creating an awareness of the implications of various courses of Government action.

As was mentioned above the first industrial programming exercise does by no means constitute a finalised programme but is to be considered only as a basis for more accurate quantitative analyses. In fact, it lies in the nature of industrial programming that the actual programmes are approximations that need to be periodically reviewed, up-dated and adjusted.

It is therefore of significant importance that the industrial programming efforts take place in a continuous process. In this process current developments, private sector plans and assessments, as well as the various public sector institutions' actions and findings should be systematically considered and incorporated. The following sections outline the specific actions, institutional arrangements and technical assistance required for the future programming efforts.

2. Further industrial programming activities

For the continued industrial programming process it is considered necessary to carry out the following, largely inter-related activities:

(a) Revision and up-dating of programme

Firstly it is regarded necessary to improve the first programme by:

- detailed demand projections
- carrying out consistency checks of the programme
- carrying out analyses of the effects of policy instruments
- undertaking export projections
- checking and analysing major deviations between projections of various agencies.

Secondly, it would be desirable to carry out a revision of the first, tentative programme with projections and targets for 1982 as well as a short-term operational plan for 1976 if possible.

(b) Monitoring programme implementation

Recurrent monitoring of actual developments of industrial production, prices, employment and other indicators is necessary as a basis for programme up-dating and revisions. Data collection and industrial studies will thus be required.

(c) Branch studies

A more detailed systematic analysis and programming is recommended to be undertaken of industrial branches, sub-branches, and product groups.

The first step would be the stocktaking, co-ordination and analysis of industrial branch studies which have been or are being undertaken by various governmental or other institutions.

Basically, these branch studies would focus on the analysis of major economic, financial and technological problems prevailing in the branch and on the identification of long-term growth potentials.

An order of priority in which the branch studies be carried out should be established. One criterion could be the degree of labour intensity in the various industries. In this case the following sub-branches would be chosen as a first priority category:

1. Apparel and footwear and other textile industries
2. Grain mills and baking products

3. Leather products
4. Fabricated and repair of metallic products except machinery and transport equipment
5. Rubber products
6. Slaughtering and processing of meat and other processing of food
7. Wood industries, wood products, furniture production, paper products and publishing
8. Fabricated and repair of electrical machinery, apparatus and accessories
9. Perfumes and cosmetics.

Other criteria for selecting industries for detailed studies would be the industrial growth rates, in order to investigate the most rapidly expanding industries (see page).

Basically, these branch studies would focus on the analysis of major economic, financial and technological problems prevailing in the branch and on the identification of long-term growth potential.

More specifically, the branch studies would cover the following aspects:

- production structure, growth trends, existing and projected investment plans
- foreign trade
- demand projections of major product groups
- international competitiveness
- other major prevailing problems in the field of economics, finance, technology, product quality, supply of components and parts, manpower resources, etc.
- identification of major investment opportunities.

With regard to the competitiveness the above-mentioned UNIDO report "Industrial Programming in Mexico" contains recommendations as to specific aspects to be covered in an analysis of this issue (page 63 of the report). The recommendations list the following tasks to be undertaken:

- to measure the competitiveness of Mexican ex-factory prices in relation to the ex-factory prices of foreign producers for products sold both in domestic markets and in export markets;
- to measure the increase in cost of manufacture attributable to the lower scale of production in

Mexican enterprises and consider whether these can be lowered by greater specialisation among enterprises and increased export sales;

- to examine the impact of high-cost Mexican materials, parts, components and other supplies on the costs of production of selected enterprises, particularly those that export;
- to examine the impact of import duties on supplies, indirect taxes and other levies on the costs of production in Mexico;
- to estimate as a percentage of the f.o.b. price transport costs on imports of the products from the United States, Europe and Japan and compare these with transport costs for Mexican products exported to these markets;
- to consider the impact on the industry of the abolition of import licensing on 1 January 1980 [1/] assuming nominal tariff protection would be established at the level discussed in the report on "Industrial Protection in Mexico".

The following two branches have already been studied to a certain detail and would render themselves to an analysis acoording to some of the relevant aspects mentioned above:

- automotive assembly industry (SIC)
- capital goods industry (NAFINSA)

(d) Regional planning

In view of the strong emphasis that is laid on achieving a spatial distribution of industries it is considered essential to pursue a clear regional development policy in the industrial development process. Regional industrial programming should therefore receive increasing attention. SIC is already laying the groundwork for this activity as is described in this report.

(e) Investment promotion

A logical and necessary step in the Mexican industrial programming process is to actively promote investments in identified priority/growth industries. This activity would involve the preparation of opportunity studies, the

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1/ The quoted report recommends such a policy change.

dissemination of such studies and other relevant information to potential investors and the administrative support in bringing the investment projects through the various stages of implementation.

3. Industrial programming machinery

(a) General

It is generally recognised that the institutional establishment of a development programming process set up for data collection, surveys, preparation of plans, co-ordination of sector programmes, plan implementation, etc. is as important for the effective fostering of industrial development as the industrial programme per se.

Obviously an industrial programme would make little sense if it is prepared in isolation of other sector programming activities. It is essential that all relevant studies and data are considered and that all Government agencies which are involved in industrial development participate in the programming and implementation process.

Experience shows that to ensure a well-functioning programming process, there are certain basic principles that need to be followed in the establishment of the programming machinery, regardless of the underlying economic system and type of planning process.

According to these principles the industrial programming unit must be:

- located at a high level in the Government's decision-making process
- fully integrated in the overall economic planning machinery
- located in a central place in the data and information flow
- operating in close contact with industry
- operating outside ministerial routine matters
- closely associated with the implementing institutions
- staffed with highly competent people.

(b) Mexico's present institutional set-up

The following institutions are engaged in planning and related activities:

(i) Ministry of Industry and Commerce

The unit carrying out industrial programming and studies in the Ministry is the Department of Promotion and Industrial Programming attached to the General Direction of Industry.

The department started to operate in 1971. It is staffed with five economists and one chemical engineer who formed the counterpart team for the reported formulation of an industrial development programme. A first attempt was also made to involve the sub-directions which are in charge of and specialised in certain industrial branches.

Dirección General de Estadísticas

This institution reports directly to the Sub-Secretaría de Comercio de SIC and is in charge of collecting data throughout the country to produce the national census. In particular it prepares the industrial census which is published every five years and an industrial monthly report based on an analysis of the activity in a sample of industrial enterprises, usually the most important within their respective branches in terms of production and its value.

Centro de Información Industrial

This section of the Ministry was recently created to help foster industrial development by proceeding industrial information to enterprises and investors. Its functions are the following:

- compiling industrial information from all available sources of the country

- organising industrial exhibitions; publishing and distributing literature on raw materials, machinery and equipment, technologies available and transfor conditions
- providing information on the Mexican industry and its production, etc.

(ii) Secretaría de la Presidencia

Dirección Coordinadora de la Programación Económica y Social

This section of the Presidencia is in charge of co-ordinating the plans of ministries and official agencies and to formulate the national economic and social plan. The section has prepared several studies in collaboration with the Secretaría de Hacienda y Crédito Público and the Secretaría del Patrimonio Nacional. These institutions were assisted by experts from the Consejo Nacional de Ciencia y Tecnología (CONACYT), the Fondo de Cultura Económica and the Economic Commission for Latin America (ECLA). The studies covered the industrial, agricultural and foreign sectors, as well as employment; two other reports deal with administrative reforms and general guidelines for the economic and social development programme of the country.

Sistema de Información para la Programación Económica y Social

This section of the Presidencia has the objective to compile data for economic planning purposes.

(iii) Banco de México, S.A.

The central bank has several sections which provide data required for the decision-making in the organisation. The section on industrial research carries out studies on specific branches in order to prepare indices for measuring actual development. The section on economic studies performs studies on the general economic activity of the country.

The bank has also a department for planning human resources for industry.

(iv) Nacional Financiera, S.A. (NAFINSA)

This is the public, industrial finance institution of Mexico. The recently appointed Dirección de Programación Industrial is in charge of carrying out sectoral analyses, feasibility studies, and industrial promotion. In the past, this function was carried out by the Gerencia de Proyectos y Programación Industrial which produced several studies on branches such as iron and steel, textiles, etc. With UNIDO's assistance a study on the programming of the capital goods sector is being carried out.

NAFINSA administers the fund for pre-investment studies established in 1968 to assist industrial investors, technically and financially, in the execution of pre-investment studies. The fund is ruled by a technical committee consisting of representatives from Hacienda, Presidencia and NAFINSA. Up to now, the fund has granted 99.1 million pesos, most of it during the last two years, for agricultural, industrial and commercial projects.

(v) Instituto Mexicano de Comercio Exterior (IMCE)

IMCE has a Departamento de Industrias reporting to the Dirección de Promoción Nacional. Its function is to promote, assist and organise export-oriented industries.

There is also a Departamento de Bienes Primarios promoting the installation of agro-industrial plants in the interior of the country.

(vi) Centro de Investigación y Docencia Económica

This organisation is headed by the General Director of the Fondo de Cultura Económica. It is staffed with economists who carry out specific studies for the President. They participate in economic planning and carried out a study on employment.

(vii) Other institutions

There are several other institutions working on macro-economic problems in Mexico which have a bearing on industrial programming. The Comisión Nacional del Salario Mínimo is for instance working on various industrial and economic matters related to planning.

A permanent committee on protection has been set up with representatives of Presidencia, SIC and Hacienda to deal with the problems of industrial protection.

4. Recommendations

(a) Recommendations concerning the institutional machinery industrial programming

It is generally recognised by Mexican Government officials:

- that it is essential to build up industrial programming capacities in SIC;
- that these capacities be located at a fairly high administrative level; and
- that close working relations be established with other Government agencies involved in planning, in particular with Presidencia.

It is recommended that the present Department of Promotion and Industrial Programming in SIC forms the nucleus for carrying out the further programming activities as outlined in previous sections.

The promotion activities could be transferred to a separate investment promotion unit so as to ensure that each of the two different fields of activity receive due attention and that the two units can specialise and develop to become clear-cut entities. The programming unit should cover the fields of industrial surveys and studies; projections, programme formulation, regional planning, monitoring and policy formulation. In addition the unit should co-ordinate industrial studies being carried out by foreign expertise attached to SIC and other bodies or by Mexican staff in the various SIC sub-directions.

Based on observations on the prevailing institutional set-up and general international experience it is considered a pre-requisite for the effective work of the industrial programming and policies unit to be located on an administrative level in SIC. The most appropriate location will have to be considered carefully.

The main reasons for up-grading the planning functions can be summarised as follows:

- authority contacts to the Ministry's policy-making function;
- authority for access to full co-operation and available data of the various departments of SIC;
- authority through the Under-Secretary of Commerce to closely co-operate with the general direction of statistics for obtaining data, determining data need, etc.;
- authority to have direct contacts with the Presidencia as well as with other ministries and public bodies;
- authority to be able to obtain required information from private industry;
- authority to co-ordinate various relevant foreign technical assistance projects with SIC.

For the task of industrial promotion, which should be done in an active and systematic way, the organisational form of a semi-autonomous body would be most appropriate. It is recommended that a new separate body be established or that the promotion function be attached to a unit in an existing semi-autonomous body such as the newly established Centro de Información Industrial en SIC. The agency entrusted with this function should identify, contact and inform potential investors for specific investment projects, as well as give guidance and assistance to interested foreign industrialists.

Strong emphasis should be laid by this programme on an active approach to promotion according to the country's priorities. A passive response to outside enquiries

would not allow the needed channelling of foreign investments and transfers of technology in the most advantageous manner for the Mexican economy.

To ensure that the programming section receives proper overall policy guidance and that the programming activities are fully integrated with the overall economic planning work the establishment of a permanent committee for planning and policies is recommended. The committee could be composed of representatives of SIC, the Presidencia, Hacienda, Banco de México and NAFINSA.

(b) Recommendations for further UNDP/UNIDO assistance

(i) General observations

Further industrial programming in SIC could be effectuated by:

- assigning a substantial, qualified Mexican programming group to the Secretaría;
- establishing close inter-ministerial co-operation and,
- attaching foreign technical assistance to SIC.

The foreign expertise is expected to complement the Mexican programming work by ensuring the proper use and application of international programming experience and by co-ordinating other envisaged assistance in this field.

(ii) Proposed assistance

While presently a short-term, one-man UNDP/UNIDO project is being considered for carrying on the industrial programming activities during the period November 1974 - March 1975, subsequent three-years technical assistance project is proposed for UNDP financing. A draft project document (in Spanish) is contained in Annex II.

The project is expected to cover the period March 1975 to March 1978 and would involve a UNDP contribution of US$ 533,100 and a Government contribution of 4,483,000 pesos. Besides the foreign long-term and short-term expertise that is foreseen in the project, it is envisaged that assistance will be rendered in carrying out two meetings in Mexico on industrial programming. The meetings aim at bringing together high Government officials and planners and reputable international experts, as well as representatives from industry to exchange views on industrial development and the programming activities. The meetings are tentatively scheduled for May 1975 and May 1977.

ANNEX II - DRAFT OF PROJECT DOCUMENT FOR UNDP ASSISTANCE (if Special)

PROGRAMA DE LAS NACIONES UNIDAS PARA EL DESARROLLO

Programa del Gobierno de México

Título: Programación Industrial

Número: MEX/74/ Duración: 4 años

Sector: Industria

Subsector: Planificación y Programación Industrial

Organismo Nacional Ejecutor: Secretaría de Industria y Comercio

Organismo Internacional Participante y Ejecutor: Organización de las Naciones Unidas para el Desarrollo Industrial.

Fecha de Solicitud: Fecha de inicio de operaciones.

Contribución del Gobierno: Contribución del PNUD:

4,483,000 pesos mexicanos 533,100 dólares de EUA

Aprobado: _____ Fecha: _____

Por el Gobierno de Mexico

_____ Fecha: _____

Por el Organismo Internacional

_____ Fecha: _____

Por el PNUD

SECCION I.

ANTECEDENTES E INFORMACION DE APOYO

A. Justificación del Proyecto.

El Gobierno Mexicano ha decidido desempeñar un papel mas activo en el fomento del desarrollo económico e industrial del país, mediante la formulación de programas de desarrollo. Dichos programas tendrán como propósito regir las inversiones en el sector público en una forma coordinada y guiar la inversión privada.

Para la preparación de un programa de desarrollo industrial, el Gobierno solicitó y recibió asistencia del PNUD/ONUDI, financiada parcialmente con el Fondo Fiduciario de los Servicios Especiales (SIE) y con Fondos de la Cifra Indicativa de Planificación (CIP). La asistencia fué prestada durante el periodo marzo/julio 1974.

Los expertos de ONUDI y miembros de la Secretaría de Industria y Comercio prepararon un primer programa de desarrollo industrial que cubre hasta 1982 y que constituye el paso inicial de un proceso de programación continuo que el Gobierno considera vital establecer.

El Gobierno quiere llevar a cabo análisis cuantitativos mas detallados del sector industrial y mejorar y mantener al día los programas industriales basados en el primer programa y en los resultados del ejercicio de programación industrial.

Las actividades de programación industrial servirán de plataforma para la determinación de metas de desarrollo industrial por parte del Gobierno, de prioridades dentro del marco de los objetivos económicos y para formular políticas industriales racionales a efectos de lograr dichas metas.

El Gobierno ha decidido concentrar gradualmente las capacidades de programación en la Secretaría de Industria y Comercio, a efectos de contar con una unidad competente y permanente para llevar a cabo los controles y puestas al día de los programas, supervisación periódica del desarrollo real, análisis económicos detallados, planificación regional y determinación de políticas industriales.

Se considera esencial obtener la asistencia del PNUD/ONUDI, para las actividades de programación industrial, que incluyan la búsqueda y compilación de estadísticas necesarias y para el entrenamiento sistemático del personal mexicano.

Las pericias extranjeras complementarán el trabajo de programación del Gobierno de México, al asegurar debida experiencia internacional en programación y al coordinar toda la asistencia encarada en este y otros campos relacionados.

Se espera que el proyecto tenga un gran impacto en el proceso de planificación de México y en el desarrollo industrial del país. Será precedido por un proyecto de corto plazo del PNUD/ONUDI (DP/MEX/74/xxx), de cuatro meses de duración (noviembre 1974 - marzo 1975), durante el cual se realizarán actividades preparatorias.

B. Marco institucional

La oficina gubernamental que coopera en la ejecución del proyecto es la Secretaría de Industria y Comercio. El proyecto será localizado en el Departamento de Promoción y Programación Industrial, el cual reporta a la Sub-Dirección General de Industria. En el ejercicio de programación industrial participará el personal profesional permanente del Departamento y algunos miembros de las Subdirecciones encargadas de ramas industriales específicas.

Se mantendrá una estrecha cooperación con las instituciones siguientes, que están vinculadas con la planificación y/o recopilación de estadísticas e informes y otros estudios relacionados:

La Dirección Coordinadora de la Programación Económica y Social, de la Secretaría de la Presidencia,

que tiene a su cargo la programación total del desarrollo económico y coordina planes de desarrollo para los diversos sectores. Por lo tanto, los programas de desarrollo industrial a que nos referimos, serán discutidos conformemente con esta dependencia oficial, a efectos de revisarlos y estudiar su integración futura en el programa total.

El Sistema de Información para la Programación Económica y Social, de la Secretaría de la Presidencia,

que se ocupa de la copilación y obtención de información y estadísticas para planificación económica.

El Banco de Mexico, S.A.,

que lleva a cabo estudios de las actividades económicas generales en el país, propone índices para medir el desarrollo real y planifica la utilización de la mano de obra.

El Centro de Investigación y Docencia Económica,

realiza estudios específicos para el Presidente y participa en la planificación económica y estudios de ocupación y desempleo.

La Dirección General de Estadísticas,

que depende directamente de la Subsecretaría de Comercio de SIC, tiene a su cargo la copilación de estadísticas y la preparación de censos industriales. Un censo industrial es realizado cada 5 años y un informe industrial aparece mensualmente.

Un Comité Gubernamental de Protección,

que ha sido creado con la participación de representantes de la Secretaría de la Presidencia, SIC y la Secretaría de Hacienda y Crédito Público.

C. Previsiones para el Seguimiento Gubernamental.

El objetivo del proyecto consiste en asistir a la Secretaría de Industria y Comercio en el proceso de programación industrial. El personal profesional del Departamento de Promoción y Programación Industrial continuará desarrollando las subsecuentes actividades.

D. Otras actividades relacionadas

El Gobierno de México recibe y continuará recibiendo del PNUD/ONUDI asistencia en un número de campos que tienen estrecha relación y probable gran peso en las actividades de programación industrial per se.

preparación de estudios de factibilidad. Los programadores industriales transcribirán e incorporarán los hallazgos del programa de bienes de capital en el programa industrial.

(iv) Un proyecto tecnológico previsto de CONACYT proveerá a los programadores una cantidad substancial de datos relevantes de programación.

E. Asistencia futura del PNUD

No se preve, a esta altura, ninguna asistencia posterior.

SECCION II.

OBJETIVOS DEL PROYECTO

El proyecto no está incluído en el programa sectorial de México.

A. Objetivos del Proyecto a Largo Plazo

El proyecto permitirá al Gobierno formular programas de desarrollo industrial de acuerdo con los objetivos nacionales de desarrollo económico a largo plazo. El propósito fundamental consiste en engranar y coordinar las inversiones públicas y privadas a través de programas y alcanzar un crecimiento sostenido y equilibrado a largo plazo.

B. Objetivos inmediatos del proyecto

El proyecto no tiene potenciales inmediatos de inversión. Sin embargo, las actividades del proyecto serán de importancia directa para la selección y programación de las inversiones.

Los objetivos del proyecto son los siguientes:

a) Formación gradual de un proceso de programación industrial de buen funcionamiento, dentro del marco del sistema de planificación total.
b) Analizar la estructura industrial, problemas de desarrollo prevalecientes y las tendencias actuales y futuras.
c) Formular programas y políticas industriales.
d) Establecer un sistema de supervisación y control para implementación y puesta al día de los programas.
e) Coordinar los estudios de ramas industriales y otras actividades relacionadas de programación.
f) Creación de un cuadro de programadores competentes mexicanos.

El proyecto comprenderá también el análisis de las relaciones existentes entre el sector manufacturero con otros sectores de la economía, tales como el agrícola, para el cual es necesario diseñar un programa de industrialización específico, con el objeto de promover un crecimiento mas acelerado del mismo.

Es de la mayor importancia que haya una efectiva coordinación con los demás proyectos relevantes. La naturaleza de un proceso de programación industrial exige llevar a cabo diversas investigaciones, estudios, proyecciones, para proveer la información detallada necesaria a los propósitos de la programación. Los programadores industriales tendrán que asumir el rol de coordinadores, incorporando los hallazgos de los otros expertos en los campos relacionados al proceso de programación. Este proceder permitirá que se asista especialmente en áreas consideradas de significación en el contexto general y que estadísticas económicas y/u otra información diversa de las industrias sean obtenidas y copiladas directa y centralmente con fines de programación.

Se cuenta con que se podrá evitar la duplicación y repetición de entrevistas y colección y compilación de estadísticas e informaciones básicas industriales, de agencias de gobierno e instituciones.

Los proyectos del PNUD/ONUDI que son de relevancia especial a efectos de la programación, y que, por lo tanto, deberán estar asociados estrechamente, son los siguientes:

(i) El proyecto sobre industrias con potencial de exportación (IS/MEX/74/002 y subsiguientes), contribuirá significativamente aportando estadísticas de costos y otra información de ramas industriales especiales. Un cuestionario especial será preparado por los expertos de este proyecto para obtener estadísticas específicas de programación, además de sus tareas principales de adaptación del producto.

(ii) Se prevé un programa de largo alcance de substitución de importaciones, a ser realizado con asistencia del PNUD/ONUDI. Este proyecto constituirá directamente parte del proceso de programación industrial. La prevista identificación sistemática de oportunidades de inversión deberán ser parte integral de la programación. Los programadores industriales dirigirán y coordinarán las actividades del proyecto de acuerdo con las necesidades de programación.

(iii) El proyecto de bienes de capital (DP/MEX/72/014) ha delineado la demanda doméstica de varios grupos de bienes de capital y actualmente se ocupa de la

SECCION III

PLAN DE TRABAJO

A. Descripción de las Actividades del Proyecto.

En cooperación con el personal profesional de la Secretaría de Industria y Comercio, se llevarán a cabo las siguientes actividades:

1) Desarrollar sistemas, métodos y planes de programación industrial.
2) Llevar a cabo estudios detallados de las ramas industriales sobre:
   - estructura de producción, tendencias de crecimiento, planes de inversión existentes y/o en proyecto,
   - comercio exterior,
   - proyecciones de demanda de los grupos mayores de productos,
   - competitividad internacional,
   - otros problemas prevalecientes en el campo de la economía, finanzas, tecnología, calidad del producto, provisión y costos de componentes y partes, recursos de mano de obra, etc.,
   - identificación de oportunidades de inversión,
   - impacto de las políticas y medidas industriales en operatividad y eficiencia.
3) Coordinar los estudios industriales de las diferentes ramas que sean llevados a cabo.
4) Mantener al día los resultados que las políticas y medidas actuales ocasionen en el tamaño, dirección, ubicación y formas de inversión.
5) Formular las prioridades de desarrollo industrial, en base a los objetivos de desarrollo económico.
6) Revisar y poner al día el programa de desarrollo industrial a largo plazo que llega hasta 1982.
7) Preparar programas industriales anuales y periódicos.
8) Rever el desarrollo regional y formular programas regionales para la distribución local de industrias de las áreas congestionadas y para promover áreas adaptables para la concentración de industrias.
9) Formular políticas industriales y otras medidas necesarias para implementar los programas de desarrollo.
10) Organizar la colección, copilación y análisis de estadísticas industriales.
11) Desarrollar la maquinaria institucional apropiada para la programación industrial.

12) Crear la coordinación necesaria y asegurar la continuidad con los demás proyectos de corto plazo del PNUD/UNIDO al SIC.
13) Mejorar la experiencia y capacidad del personal de contraparte en los campos arriba mencionados.

La localización de las actividades del proyecto será en la Ciudad de México. Serán realizados viajes al interior del país cuando fuese necesario. El entrenamiento del personal de la contraparte será llevado a cabo en el lugar de trabajo, como así también en cursos en el extranjero, por medio de becas.

5. Programa de las actividades del proyecto.

Las actividades del proyecto son de naturaleza continua, y por lo tanto se realizarán durante todo el período de duración del proyecto, o sea desde marzo 1975 hasta marzo 1978. El diagrama de barras muestra, sin embargo, que el trabajo de los consultores a corto plazo, concernientes principalmente a las actividades detalladas en 2), comenzará en julio 1975 y terminará en diciembre 1977.

Las actividades del proyecto descriptas en 1, 5, y 11 recibirán especial atención en las dos conferencias previstas (mayo 1975 y mayo 1977), a pesar que estas actividades serán, sin embargo, desarrolladas durante todo el período.

C. Descripción de la contribución del PNUD.

1. Asignación de personal internacional.

PROGRAMADOR INDUSTRIAL (Director del Proyecto)

El experto aconsejará y asistirá en programación industrial, incluyendo todo trabajo analítico que se requiera, copilación de datos y estadísticas, aspectos institucionales, formulación de políticas, etc.

El experto dirigirá, supervisará y coordinará el trabajo de los otros expertos, asistirá en determinar la esfera y oportunidad de trabajo de los consultores a corto plazo y será responsable por el entrenamiento del personal de contraparte. El experto asumirá también el rol de coordinador con la demás asistencia relevante [illegible] plazo a SI[illegible] y establecerá y mantendrá estrecha integración con los otros proyectos del PNUD en los diferentes organismos del Gobierno.

El puesto tiene una duración de tres años, desde marzo 197[illegible] hasta febrero 197[illegible]. Requiere un economista senior muy competente, con experiencia en el campo de políticas y programación industrial.

EXPERTO EN POLITICA INDUSTRIAL

El experto participará en las actividades de programación industrial. Específicamente, reverá los efectos que las políticas y medidas existentes causan en el tamaño, dirección y forma de las inversiones, así como también asistirá en la formulación de políticas y medidas industriales necesarias para implementar el programa de desarrollo industrial.

El puesto tendrá una duración de tres años, a comenzar en marzo 1975. Requiere un economista competente con considerable experiencia en políticas y programación industrial.

EXPERTO EN PLANIFICACION INDUSTRIAL REGIONAL

Este experto participará en las actividades de programación industrial. Específicamente, reverá el desarrollo regional industrial y formulará programas regionales para la distribución local de industrias de las areas congestionadas y para promover áreas adecuadas para la concentración de industrias.

El puesto tiene una duración de tres años, a comenzar en marzo de 1975. Requiere un economista competente con considerable experiencia en planificación industrial regional.

TRES EXPERTOS EN PROGRAMACION INDUSTRIAL

Los tres expertos serán asignados al proyecto por un período de 20 días para participar en dos reuniones guberna

mentales de alto nivel sobre programación industrial en la ciudad de México. Las fechas tentativas de las reuniones son: mayo 1985 y mayo 1987, por diez días cada vez.

Dos de los expertos serán planificadores de reputación internacional y el otro será un miembro del personal profesional de UNIDO, que se especialice en programas y políticas industriales. La duración de los servicios de estos expertos será de un mes-hombre por cada reunión, o sea un total de dos meses-hombre.

Con motivo de las reuniones, el profesional de ONUDI efectuará una puesta al día substancial de los logros del proyecto (ver Varios). También participará en la preparación de las reuniones y coordinará la contribución de ONUDI.

Las reuniones tendrán por objeto reunir a funcionarios del Gobierno, planificadores, miembros de las cámaras, investigadores e industriales, para rever el desarrollo industrial realizado y actual, y discutirlo enfatizando los objetivos de largo plazo del Gobierno y las prioridades, potenciales de crecimiento y/o impedimentos, resultados de políticas y medidas, competividad de la industria, etc.

Las reuniones permitirán así efectuar una puesta al día comprensiva y desde varios ángulos distintos del proceso de programación industrial y dará impulso al proceso continuo. El diálogo entre las varias instituciones se espera que lleve a una mayor colaboración en este terreno.

Las reuniones, que tendrán lugar en la ciudad de México, serán atendidas por oficiales de alto nivel y por industriales, y serán organizadas por SIC en colaboración con ONUDI.

De parte del PNUD/ONUDI, el personal del proyecto y los expertos a corto plazo asistirán en los prepatativos.

EXPERTOS DE CORTO PLAZO

Para asegurar la necesaria flexibilidad y cobertura que precisa el proyecto, se considera esencial una provisión para contratar expertos con tareas de aproximadamente 3 a 6 meses de duración. Los expertos a corto plazo serán contratados en base ad-hoc para llevar a cabo las tareas específicas que se les requiera. A esta altura se puede prever que dichas tareas cubrirán principalmente la preparación de estudios en profundidad de ramas industriales seleccionadas.

Los estudios de estas ramas deberán abarcar los siguientes aspectos:

- estructuras de producción, tendencias de crecimiento, planes de inversión existentes y en proyecto,
- comercio exterior,
- proyecciones de demanda de los grupos mayores de productos,
- competitividad internacional,
- otros problemas prevalecientes en el campo de la economía, finanzas, tecnología, calidad de productos, provisión y costos de componentes y partes, recursos de mano de obra,
- identificación de oportunidades de inversión,
- impacto de las políticas y medidas industriales en productividad y eficiencia.

El orden de prioridad en que se llevarán a cabo estos estudios puede ya ser establecido. Un criterio puede ser el grado de intensidad de la mano de obra en las diversas industrias, ya que la absorción de mano de obra será uno de los objetivos claves del programa industrial. En ese caso se examinarán las siguientes ramas:

1) Industrias del vestido, calzado y otras industrias textiles,
2) Molinos
3) Productos de cuero
4) Fabricación y reparación de productos de metal, excepto maquinaria y equipo de transporte.
5) Productos de goma
6) Mataderos y elaboración de carne y otros productos alimenticios
7) Industrias de la madera, productos de madera, muebles, productos de papel e imprentas
8) Fabricación y reparación de maquinaria eléctrica, aparatos y accesorios
9) Perfumes y cosméticos.

Además de llevar a cabo estudios de las ramas industriales, el componente de expertos a corto plazo también será utilizado para contratar expertos para trabajos de programación en computadoras.

2. Demás personal del proyecto

Este subcomponente (de acuerdo a la revisión propuesta por el PNUD al Capítulo IV), comprende costos de viajes y varios para la participación del personal de ONUDI en el proyecto y para rever las actividades del proyecto. En conexión con las dos reuniones de programación previstas en México, dos miembros de ONUDI (uno de los cuales será un profesional senior en el campo de programación industrial) serán asignados al proyecto por el período de un mes/hombre en 1975 y otro mes/hombre en 1977. En 1977 se efectuará una puesta al día del proyecto.

3. Becas

A efectos de lograr el objetivo de constituir un grupo de programadores industriales mexicanos competentes, se prestará especial atención al entrenamiento del personal de la contraparte. Además del entrenamiento en el lugar de trabajo y la participación directa en el trabajo de programación, incluyendo la participación en las dis reuniones, habrá una provisión de cuatro becas en el extranjero.

Las becas, que cubrirán un período de tres meses cada una, se las ha programado de la siguiente forma: dos becas en 1975 y una en 1976 y 1977 respectivamente. Las becas serán otorgadas para atender cursos especiales de entrenamiento en el extranjero y para permitir a la contraparte trabajar en agencias extranjeras de planificación.

La selección final de los cursos y agencias extranjeras planificadoras mas adecuados, será comensada tan pronto como el director del proyecto sea designado.

4. Varios

Como se vé en el presupuesto, este componente tiene una provisión para costos de revisiones, puestas al día y varios.

Se considera esencial contar con una pequeña biblioteca de literatura de referencia y documentos interesantes de programación. Se requiere una cantidad total de dos mil dolares estadounidenses para adquirir estas publicaciones mexicanas y/o extranjeras.

D. Descripción de la Contribución del Gobierno Mexicano

El Gobierno proveerá la acomodación en oficinas, los servicios secretariales, los materiales de trabajo, etc., necesarios. También otorgará las facilidades adecuadas para depósito y archivo de libros, documentos, informes, etc. Para análisis rsgresivos y otros se dará acceso a computación.

Un auto con chofer será provisto para transporte dentro y alrededor de la ciudad de México. El Gobierno cubrirá los gastos de mantenimiento y combustible del vehículo. Para viajes oficiales dentro del país, el Gobierno otorgará transporte aéreo.

1. Asignación del Personal Mexicano.

El personal de la contraparte consiste en seis profesionales adscriptos por completo al proyecto. Es de desear que el número aumente a diez. Además, se cuenta con que numerosos otros profesionales de SIC participen ad-hoc en el proyecto.

Presupuesto del proyecto correspondiente
a la contribución del PNUD
(en dolares de EUA)

País: México

Número del Proyecto: MEX/74/

Título: Programación Industrial

		TOTAL		1975		1976		1977		1978	
		m/h*	$	m/h	$	m/h	$	m/h	$	m/h	$
10.	PERSONAL DEL PROYECTO										
11	Expertos										
11-01	Programador Industrial (Director del Proyecto)	36	90,000	10	25,000	12	30,000	12	30,000	2	5,000
11-02	Experto en política industrial	36	90,000	10	25,000	12	30,000	12	30,000	2	5,000
11-03	Experto en Desarrollo Ind.Regional	36	90,000	10	25,000	12	30,000	12	30,000	2	5,000
11-04	Experto en Programación Industrial)										
11-05	Experto en Programación Industrial(	2	5,000	1	2,500	-	-	1	2,500	-	-
11-06	Experto en Programación Industrial)										
11-07	Consultores a corto plaso	90	225,000	18	45,000	36	90,000	36	90,000	-	-
11-99	Subtotal	200	500,000	49	122,500	72	180,000	73	182,500	6	15,000
13			6,500		2,500		1,500		1,500		2,500
19	Total del Componente	200	506,500	49	125,000	72	181,500	73	184,000	6	17,500
30.	CAPACITACION										
31	Becas		12,600		6,300		3,150		3,150		-
39	Total del Componente		12,600		6,300		3,150		3,150		-
50.	GASTOS DIVERSOS										
52	Costos de Informes		7,000		1,500		1,500		3,000		1,000
53	Varios		7,000		2,300		2,300		1,300		1,100
59	Total del Componente		14,000		3,800		3,800		4,300		2,100
99	TOTAL GENERAL	200	533,100	49	135,100	72	188,450	73	191,450	6	20,600

* mes/hombre

B. **Contribuciones en especie del Gobierno Mexicano al presupuesto del proyecto (en moneda nacional)**

País: México

Número del Proyecto: MEX/74/

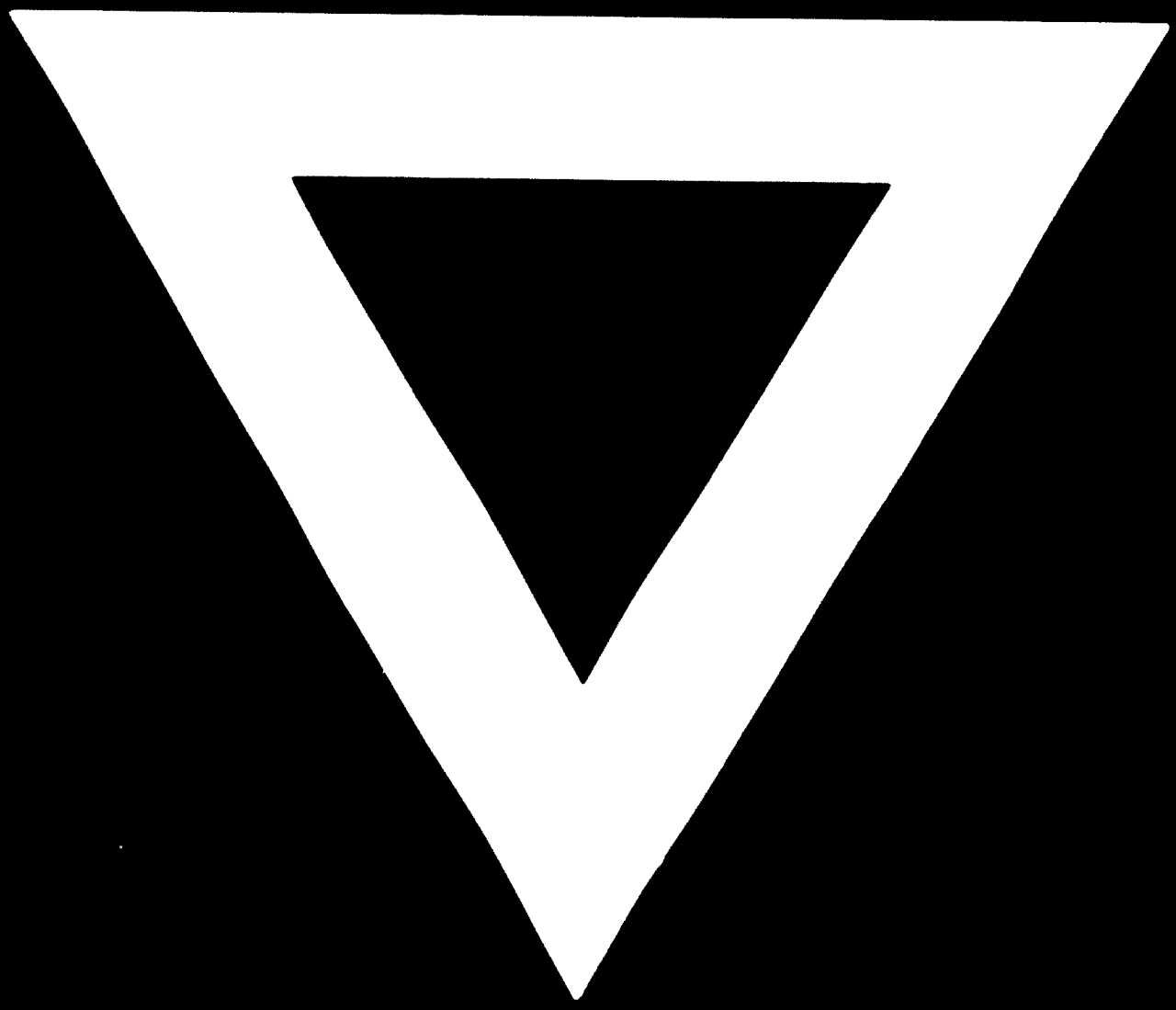
Título: Programación Industrial

		TOTAL		1975		1976		1977		1978	
		m/h	$	m/h	$	m/h	$	m/h	$	m/h	$
10.	**PERSONAL DEL PROYECTO**										
	Contraparte de los asesores	36	540,000	10	150,000	12	180,000	12	180,000	2	30,000
	Profesionales del Depto.de Promoción y Programación Industrial	180	3,600,000	50	1,000,000	60	1,200,000	60	1,200,000	10	200,000
19	Total del Componente	216	4,140,000	60	1,150,000	72	1,380,000	72	1,380,000	12	230,000
40.	**EQUIPO**										
42	Equipo y materiales, automovil		333,000		178,200		72,000		72,000		10,800
49	Total del Componente		333,000		178,000		72,000		72,000		10,800
50.	**GASTOS VARIOS**										
51	Mantenimiento		10,000		3,000		3,300		3,300		400
59	Total del Componente		10,000		3,000		3,300		3,300		400
99.	TOTAL GENERAL	216	4,483,000	60	1,331,200	72	1,455,300	72	1,455,300	12	241,200

PLAN DE TRABAJO

DIAGRAMA DE BARRAS.-

	1974 EFMAMJJASOND	1975 EFMAMJJASOND	1976 EFMAMJJASOND	1977 EFMAMJJASOND	1978 EFMAMJJASOND
ACTIVIDADES PREPARATORIAS					
-Primer ejercicio de programación (TS-DP/73/011)					
-Asistencia preparatoria (DP/74/xxx)					
PERSONAL DEL PROYECTO					
Expertos					
11-01 Programador Industrial					
11-02 Política Industrial					
11-03 Planificación Industrial Regional					
11-04 Programación Industrial (corto plazo)					
11 05 Programación Industrial (corto plazo)					
11-06 Programación industrial (corto plazo)					
11-07 Consultores a corto plazo					
BECAS					
Adscripción del personal contraparte del gobierno					
Disponibilidad de los suministros y equipos del gobierno					



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