



**TOGETHER**  
*for a sustainable future*

## OCCASION

This publication has been made available to the public on the occasion of the 50<sup>th</sup> anniversary of the United Nations Industrial Development Organisation.



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

## FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

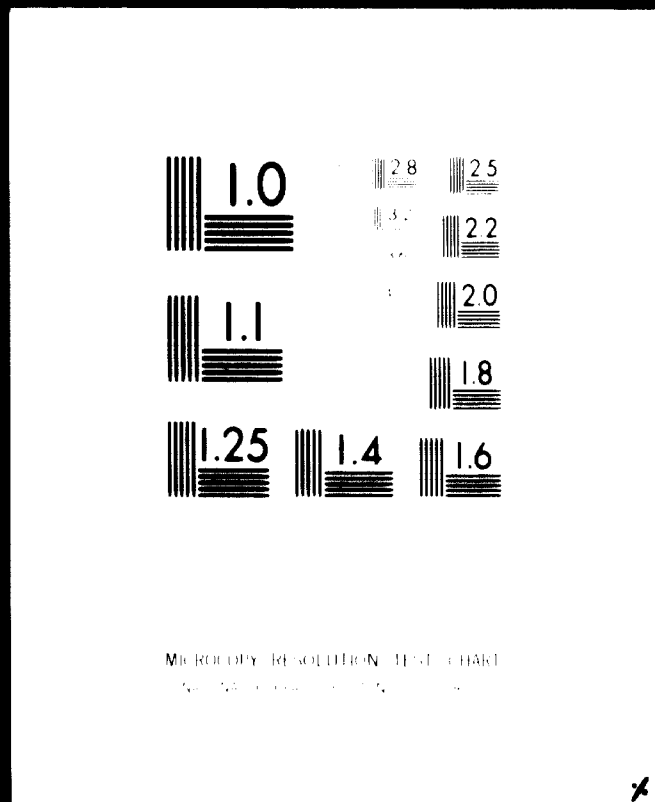
## CONTACT

Please contact [publications@unido.org](mailto:publications@unido.org) for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at [www.unido.org](http://www.unido.org)

# 1 OF 7

# 02510



02510

7

**TEPCO FILECOPY**

**UNITED NATIONS - NACIONES UNIDAS**  
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

02510

**BRA - 44 ( SF ): INDUSTRIAL SURVEY, INDUSTRIAL  
DEVELOPMENT CENTRE, FEIRA DE SANTANA**

( U. N. I. D. O. CONTRACT 70 / 58 )

**TECNIBERIA**

**ENGLISH VERSION**  
**MADRID 1971**

TECNIBERIA  
ASOCIACION ESPAÑOLA DE EMPRESAS Y OFICINAS  
DE ESTUDIOS, PROYECTOS E INVESTIGACION

To	For
PWT	ACTION
	PROJ
	DEVELOP
	OF THE
	INDUSTRIAL
	DEVELOPMENT
	ORGANIZATION
	(UNIDO)
	VIENNA
	AUSTRIA
	DATE
	4/11/77
From D.C.N.	Date

PACKING LIST

CONTENTS:

5 (five) Copies of Final Report, consisting of 2 (two) volumes each.

LANGUAGE:

English.

TITLE OF PROJECT:

"Study of the Possibilities for the Development of Metallurgical Industries  
in the State of Bahia, Brazil".

UNIDO CONTRACT:

Nº 71/1 and Amendment No. 1.

CONSIGNEE:

The Chief, TEPCO  
United Nations Industrial Development Organization (UNIDO)  
Lerchenfelderstrasse, 1.  
A-1070 VIENNA, Austria.

SHIPPER:

TECNIBERIA, Velázquez 94, MADRID - 6, Spain.



B R A - 44 (S.P.)

INDUSTRIAL SURVEY, INDUSTRIAL DEVELOPMENT CENTER  
FEIRA DE SANTANA

**TEPCO FILE COPY**

UNIDO

James W. BALANO, Project Manager

**T E C H N I B E R I A**

Pedro DE CUADRA, Economist  
Juan de Dios HERNANDEZ, Agricultural Engineer;  
José María MEGIA, Industrial Engineer  
Carlos MULAS, Mining Engineer  
Carlos SANCHEZ-REYES, Economist  
Angel TREVIÑO, Industrial Engineer

**ADMINISTRATIVE**

ACKNOWLEDGEMENT

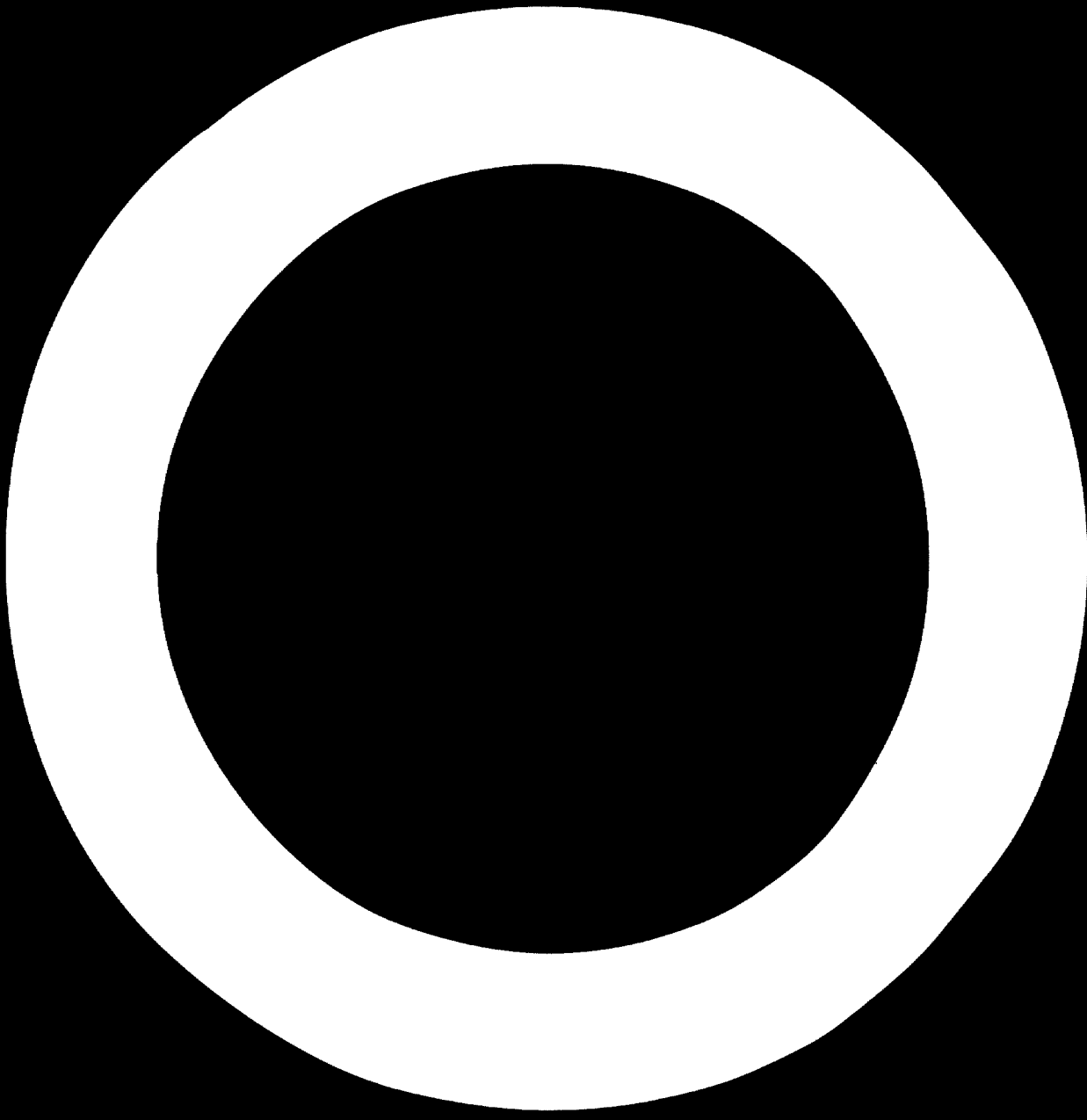
Tecniberia's team wishes to demonstrate its recognition to the Honourable Secretary of Industry and Commerce of the State of Bahia (Gobierno Luis Viana Filho) Dr. Manoel Joaquim de Barros Sobrinho; and his Assistants; the Director of the Department of Industry and Commerce of - above Secretary Dr. Luzio Feliz de Souza Filho; the Coordinator of the Centro do Fomento da Industria Dr. Leonardo Leite Nunes; the Doctresses Vanda Sampaio de Sa Barreto, Maria Regina Cunha Pitta Lima y Diolinda M. Rodrigues; Drs. Aderbal A. Pinto, Luiz Gentil, Arlindo - Braga Senna, Carlos Alberto A. Gomes, Sergio Ribeiro de Almeida y Paulo Roberto de Lima e Silva, Dr. Julival Manoel da Silva, from CEDIN, and Miss Olga Sales Lessa.

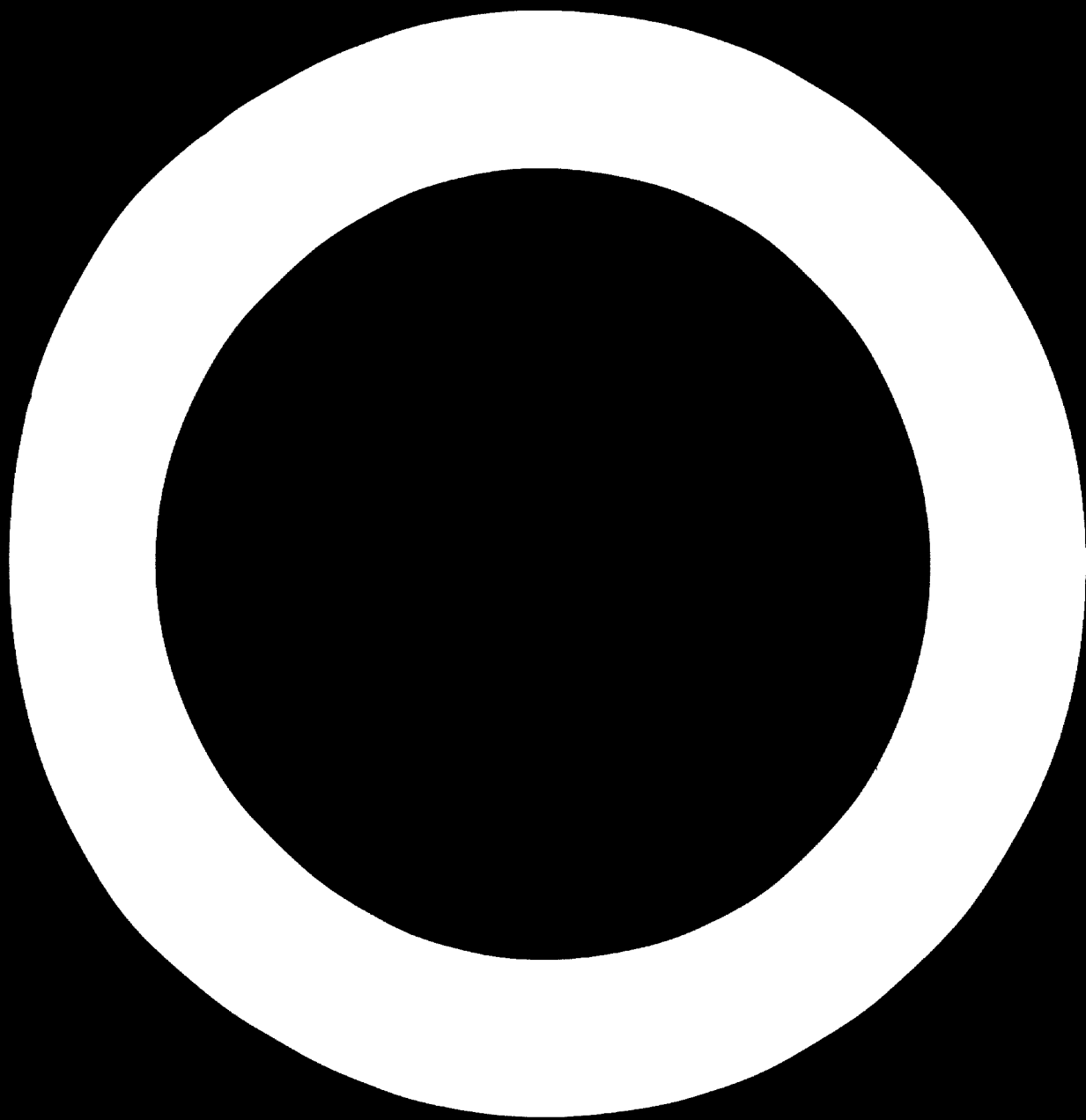
Recognition is also extended to the President and members of the Federation of Industries of Bahia and all Bahian Entrepreneurs interviewed along the survey, for their sincere cooperation.

All these persons have not only helped to make it a pleasant stay for Tecniberias team but have made possible the preparation of this survey with their open co-operation and assistance.



GENERAL SYNOPSIS OF THE STUDY





GENERAL SYNOPSIS OF THE REPORT

This report covers the initial survey of the "CEDIM Programme, Feira de Santana", which is intended to promote the industrialisation of areas of the interior of the State of Bahia, Brazil, in order to achieve a planned balance in the social and economic development of the aforementioned State, which is the largest in North-east Brazil and has a population of more than seven million people.

The fundamental purpose of the survey is to decide on suitable industries to be established at the Feira de Santana Industrial - Development Centre and in the State of Bahia in general, and to set out the measures necessary for the reorganisation and aid of those industries already in existence,

In order to cover these objectives an examination was made of the resources which could be used in industrialisation, a survey of the infrastructure of the zone, a study of the industry already in existence and finally, an investigation of the possibilities for - creating new industries which would encourage development and complete the industrial structure of the State.

The investigations carried out have revealed the following:

With regard to the infrastructure, the State is sufficiently well endowed in the area marked out for the industrial development poles in view or the "area for development", although the same does not apply for the rest of the State.

The Resources of Bahia offer a substantial basis for industrialisation. The wet coastal strip provides a wealth of products of - tropical agriculture, outstanding among which are cocoa, tobacco, sugar cane, oleaginous seeds and sisal hemp; while in this same area and in the dry areas of the inner Sertao, there are large herds consisting of more than 20 million head of cattle, pigs, sheep, goats and donkeys. The forests in this State are also of considerable importance, especially with regard to the supplies of fine tropical timber in areas of the South of the State. Mineral resources already being exploited include copper, lead, chromium, magnesium and manganese deposits, as well as considerable oil and natural gas.

Present industrial development is on a modest scale and a need

for reorganisation or conversion is observed in several sectors: oils, vegetable crops, household goods, textiles and tobacco manufactures. The petrochemical and metallurgical sectors are those which enjoy the best prospects.

The promotion of new industries enjoys excellent prospects, particularly on the basis of the manufacture of the resources from agriculture and livestock, mines and forests, with a view to exporting to other markets, both in Brazil and abroad. It would also be advisable to develop the steel industry and mechanical industries, together with others of high added value, in accordance with the specific opportunities referred to in the survey.

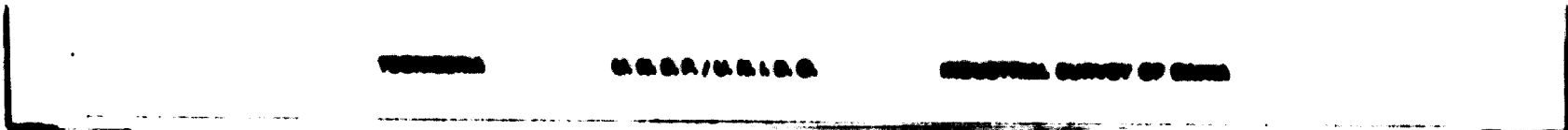


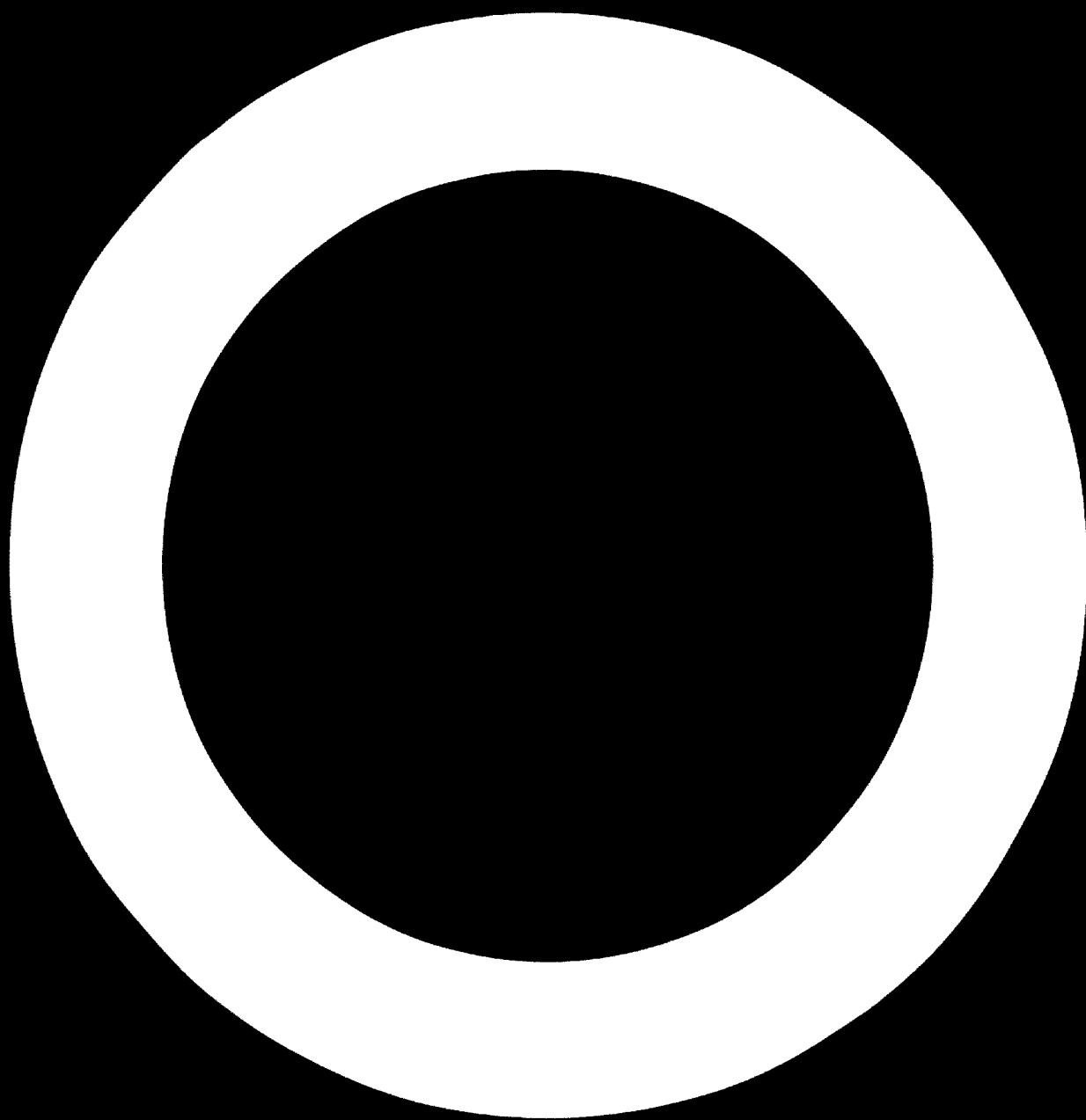
**SECRET**

**FORMER**

**SECRET/NOFORN**

**RESTRICTED CATEGORY OF DATA**





ACKNOWLEDGEMENTGENERAL SYNOPSIS OF THE STUDYINDEXGENERAL INTRODUCTIONPRELIMINARY SECTIONTEXT

**FIRST PART : BASES OF DEVELOPMENT  
AND INDUSTRIAL PRODUCTIVE  
STRUCTURES OF THE ZONE.**

1.1.	<u>Introduction</u>	I-5
1.2.	<u>Elementary Geographical description of the State</u>	I-9
1.3.	<u>Manpower Resources</u>	
1.3.1.	Evolution of population and demographic indexes	I-12
1.3.2.	Geographical distribution. City and Country population. Major population centers.	I-15
1.3.3.	Population pyramis. Potentially active population.	I-17
1.3.4.	Active and working population. Sectorial distribution of working population.	I-18
1.4.	<u>Infrastructures</u>	
1.4.1.	Introduction	I-23
1.4.2.	Electric Power	I-25
1.4.3.	Highways	I-30
1.4.4.	Railways	I-35
1.4.5.	Sea and River Ports	I-38
1.4.6.	Telecommunications	I-44
1.4.7.	Water supply and sewerage Systems.	I-48



	<u>Page</u>
1.5. <u>Natural Resources</u>	
1.5.1. Agricultural Resources	I-55
1.5.2. Vegetable Extraction	I-59
1.5.3. Forestry Resources	I-63
1.5.4. Livestock Resources	I-65
1.5.5. Marine and Fluvial Fishing Resources. Hunting Resources	I-68
1.5.6. Mineral Resources	I-71
1.6. <u>Institutions and incentives of the public sector for the development of industrialization</u>	I-81
1.6.1. Fiscal incentives	I-83
1.6.2. Financial incentives	I-86
1.6.3. Locational incentives	I-88
1.7. <u>Services for industry</u>	I-91
1.7.1. Banking and insurance	I-92
1.7.2. Transportation	I-98
1.7.3. Commercial services for industry	I-100
1.8. <u>Structure of Industrial production</u>	
1.8.1. Industrial Census	I-105
1.8.2. Geographical location	I-112
1.8.3. Analysis by Sectors	I-115
1.8.4. Development Prospects	I-127
 <b>SECOND PART: POSSIBILITIES FOR SETTING UP NEW INDUSTRIES INSIDE THE STATE.</b>  	
2.1. <u>Introduction</u>	II-5
2.2. <u>Basic Strategies for the industrial development of Bahia.</u>	II-11
2.2.1. Main characteristics of the Brazilian economy	II-12
2.2.2. Basic unbalancing factors in Brazil's present economic development	II-31

2.2.3.	Immediate prospects in the industrialization of the North East	II-39
2.2.4.	Strategies for the industrialization of the interior of Bahia	II-42
2.3.	<u>Preselection</u>	II-47
2.4.	<u>Survey and its methodology</u>	
2.4.1.	Introduction	II-65
2.4.2.	Indirect Survey	II-66
2.4.3.	General description of the phase of direct survey	II-69
2.4.4.	Utilization of the data obtained	II-71
2.5.	<u>Survey results</u>	II-79
2.5.1.	Food industries	II-80
2.5.2.	Processing industries for non-metallic minerals	II-102
2.5.3.	Wood and furniture	II-112
2.5.4.	Rubber articles	II-118
2.5.5.	Leather, hides and shoe industry	II-120
2.5.6.	Fibers, textiles and clothes	II-126
2.5.7.	Chemical industries	II-132
2.5.8.	Mining, metallurgy, siderurgy and metal processed goods	II-141
2.5.9.	Other processing industries	II-157

**THIRD PART: CONCLUSIONS AND RECOMMENDATIONS**

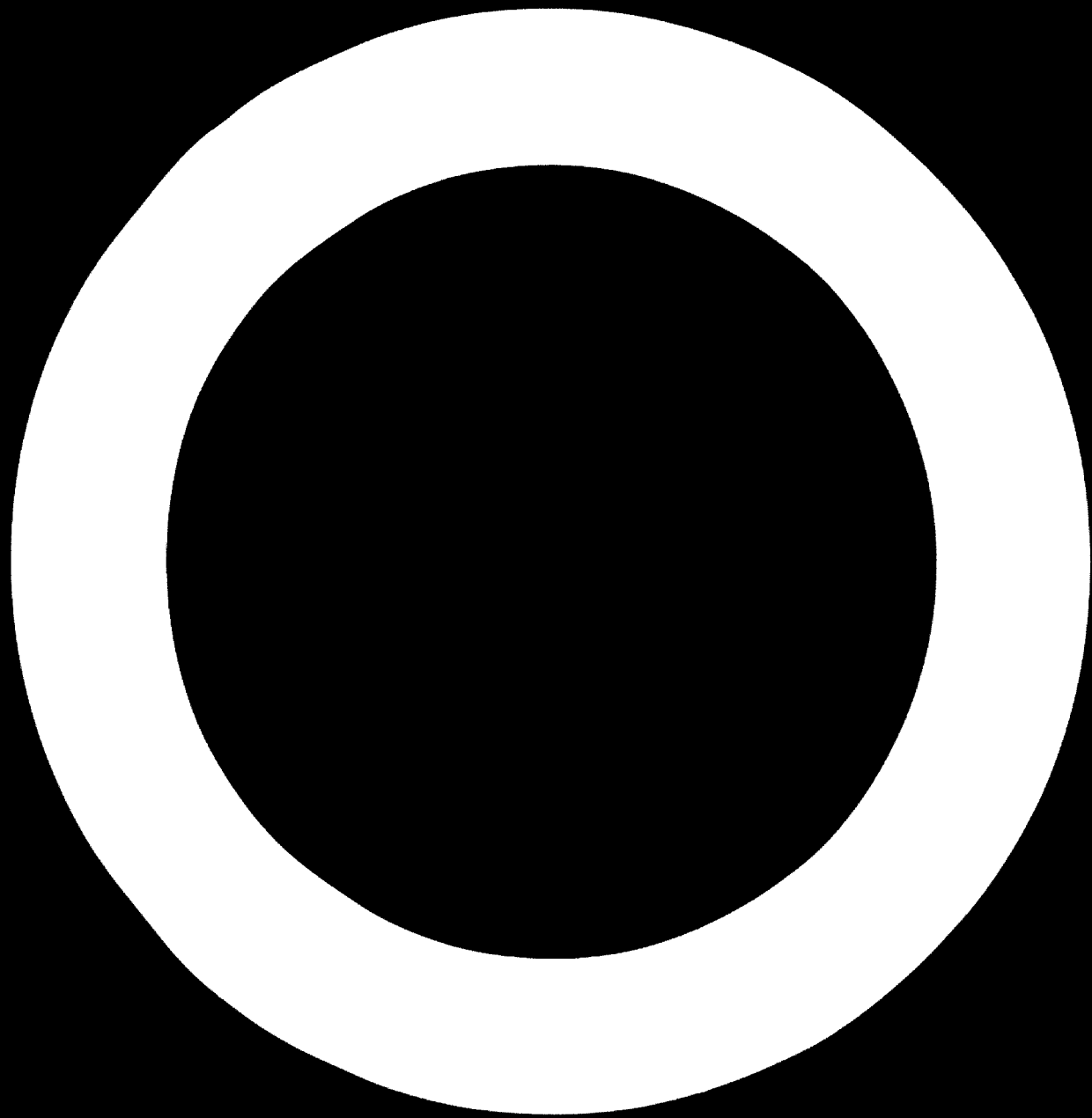
3.1.	<u>Conclusions and recommendations</u>	III-5
------	--	-------

**FINAL SECTION: SUMMARY OF THE SURVEY**

**APPENDIX**

**BIBLIOGRAPHY**

GENERAL INTRODUCTION



GENERAL INTRODUCTION

The State of Bahia is the most southern State of North East Brazil. It covers 560,000 Km<sup>2</sup> area (equivalent to that of France) and a population of over 7 million inhabitants. It gathers all the physiographic conditions which make this area the "problem zone" of the largest country of South America.

In fact, Brazilian economy offers adequate development dynamics in the industrialized southern part, which has important livestock and agricultural resources such as coffee, which is the basic product of foreign trade of the country. The Amazonia and the West which are today "The great demographic void" of Brazil offer the natural hope and prospects of the areas where resources have not been assessed or exploited.

The Problem of the Brazilian North East

In strong contrast with above areas the N.E. appears as a large regressive zone with low standard of living, strong emigration and few prospects of development if a corrective economic policy is not established. Fortunately it was started by Federal Government more than ten years ago.

It is not to be discussed herein whether the present regressive situation was caused by a climatic change -not sufficiently demonstrated from a historical point of view- or caused by a demographic growth of a agrarian economy that never developed towards secondary and tertiary levels of productive economy. Regardless of the reasons, the North East offers nowadays a physiographic structure which can be briefly described as follows:

- A narrow humid coastal strip, with rains of 2000 mm/p.a. typical tropical vegetation with basic products such as sugar cane, cotton, cocoa, (in Southern Bahia) natural rubber, tropical fruits, fine woods, etc.

- A rustic, transition zone, with medium rainfall and mild climate, agriculture of high productivity and good livestock resources. This is the most populated zone of the North East and is located - behind the coastal strip - mainly in the states closest to Equator (Rio Grande do Norte, Paraiba, Pernambuco, Alagoas y Sergipe) whereas towards the South there is no zone of transition, passing sharply to the:
- "O SERTAO" is a large semi-desertic zone periodically subject to the destructive effects of the "SECAS" which really worsen the rough characteristics of this natural region which is only apt for extensive cattle raising, supplemented in the very few spots where some humidity level is maintained -with agricultural productions of very little importance. In normal years, 500 mm of rain falls during a few weeks in the winter allow the growth of some downhill vegetation and cactus, which provide for cattle feeding. However, periodically there are years when there is no rain, and this condition is maintained during several consecutive years. These periods are called "secás", and the vegetation of the Sertao dries out, cultivation disappears and cattle dies. This situation originates famine, social conflicts and emigration.
- Finally, West of the Longá river and extending over part of the State of Piauí and the State Maranhao, there is a transition zone towards the Amazonia where vegetation and forest appear gradually.

Based on these structural characteristics Brazilian authorities in charge of the economic planning understood more than fourteen (14) years ago the necessity of planning a regional development policy for the North East, so that this area by means of adequate planning in the use of its own resources could face a growing demography in accordance with an increase of per capita income and consumption level simultaneously. In connection with this and as basic development techniques the Brazilian experts established the following guidelines:

- . Industrialization is an imperative of the economic development of the area.
- . This industrialization must be balanced by an adequate agricultural and livestock development, promoted by:
  - a) improving the productivity of tropical cultivations of the coastal strip.
  - b) establishing irrigation systems in the Sertao to the extent that basic resources make possible.
  - c) extensive livestock development in inland areas, helped by the possibilities offered; by planned irrigation systems.
- . Finally it seems timely to supplement the above measures by initiating a large scale populating process of the pre-amazonian zone.

These guidelines were put in force through Federal Agencies (SUDENE) "Superintencia do Desenvolvimento do Nordeste" "BNB" - Banco do Nordeste do Brasil; "ETENE": Technical Office of Econic Studies of BND) and the first favourable

effects are clearly observable in the initiation of a socio-economic reactivation process in North East Brazil.

Development Policy in the State of Bahia

In coordination with steps taken by the Federal Government and within their core of action the Authorities of the Government of Bahia have put into effect several actions directed to support said general reactivation policy for the North East.

In fact, the State Development Policy initiated by the Government of Bahia is directed to eliminate with sufficient anticipation the tensions of unbalance originated by a concentration of industrialization and population in specific and limited areas of said State.

Such unbalances can be seen to be clearly favoured in a natural way by physiographic conditions for the North East, in which Bahia fully participates. In fact, 37% of the Bahian population is concentrated in the coastal tropical strip, which is no more than 10% of the State Area. In addition, within this coastal strip, the area of the capital, Salvador, has a population of near one million inhabitants, equivalent to 14% of the population of the State. As if this were not enough, 50% of the State's industry is established within the area of the Capital and its surroundings. This way to the unbalances of density of population (favoured by natural distribution of agrarian resources) we have to add unbalances in the welfare of population as a consequence of location trends which are observed in the Secondary Sector.

To these facts we have to add the consequences deriving and which will be derived from the establishment of the industrial center in Aratú, within the lines of the general development policy of the State. With 20 enterprises and 5,010 jobs in operation; 38 plants with 5,141 jobs under way and requests totalizing 119 enterprises, 19,726 jobs and an investment of 2,100 million Cruzeiros.



in 1970 (about 450 million dollars), Aratú industrial center presents characteristics which may convert it into a first class industrial area. Taking into consideration the oil industry (oil extraction and refining) already installed in the Recóncavo and petrochemical installations to be located in the area, we arrive at the conclusion that possibilities of a socio-economic unbalance in the State are becoming progressively more serious as far as demographic distribution is concerned.

It is to be reminded that the reasons for the immigration and the immigration itself are originated not only because of the new jobs but by popular expectations of employment and even under-employment.

Consequently, it is clear that present industrialization process of the State may originate immigration at a higher rate that naturally originated by creation of new jobs unless some kind of corrective methods are applied. It would then reduce the benefits of said industrialization due to a concentration of unemployment, real or hidden, or sub-employment in the more industrialized areas around Salvador.

It was necessary to initiate a policy of socio-economic development in the inland zone where the basic part would be, the establishment of medium and small industries in a certain number of inland locations of strategic geographical location. This would be directed to balance the opportunities and expectations of employment, avoiding the differences between the inland and the capital area as well as the tensions which would necessarily occur.

"FEIRA DE SANTANA" Programme

In order to commerce an industrialization programme for the interior of the State, the Government of Bahia proceeded to create the CFI ( Coordenação do Fomento e Industria) to facilitate all kind of assistance (fiscal, financial, advisory and training aid, etc.) to the industry in the inland sector. Feira de Santana city was selected as the keypoint of this industrializing activity. Feira de Santana is the second city of the State (113,000 inhabitants) located at 110 Km. from the Capital, Salvador, in an important communications center which provides excellent links with all the State of Bahia. This city with a considerably important industry (about 200 enterprises including medium size factories and small workshops mainly car repair shops) is being a natural center of industrial attraction.

The organization in charge of the above programme is the CEDIN (Industrial Development Center) and is located in Feira de Santana where it had commenced its activities in provisional premises while the permanent offices were being built in that city.

This industrial development program, initiated by the Government of Bahia has been favourably considered by the United Nations Industrial Development Organization (UNIDO) with head office in Viena. UNIDO has established an assistance programme to Feira de Santana Industrial Development Center. The target of this programme is as follows:

- Generally, help to Brazilian Administration in the establishment and operation of CEDIN.
- Specifically co-operate with said center in:
  - a) the establishment of new industrial enterprises in the interior of the State.

- b) improvement and modernization of already established enterprises within said area.
- c) Generate additional incomes in order to reduce or avoid the inmigration of labour from rural areas.
- d) to balance economic development of the State of Bahia between the inland areas and Salvador area.

This assistance from UNIDO to "CEDIN, Feira de Santana project" will be materialized in the preparation of studies, assistance to planning and rendering all kinds of assistance to industries of the interior, including scholarships, books, documents, laboratory equipment, etc. The feasibility studies of the industrialization process are a basic facet of the programme. It is expected that the period of completion of these studies be two (2) years. Upon completion of studies UNIDO will decide whether the "CEDIN Feira de Santana Project" requires additional assistance.

#### Targets of this Study

This study is the preliminary research of all the studies designed by UNIDO as part of their assistance to "CEDIN, Feira de Santana Project".

The purpose of this study is to carry out a general survey of the possibilities of industrialization within inland; Bahia, and recommend the studies to be conducted in the future with a view to put specific actions into effect.

To this end an analysis was planned of the basic conditions for economic development (labour, infrastructures, supply services and assistance to industry) as well as a review of existing industry, including oil and petrochemical

industries, major industries in areas near Salvador and industries in the inland. The results of a survey carried out by the "Nucleus of Industrial Aid to Bahia State" on 500 industrial concerns (PROINTER programme) will be used, although basically said analysis will be carried out by means of direct research conducted by the team itself.

After review of above analysis prior to study, the possibilities of industrialization of inland Bahia will be considered as follows:

- a) Agricultural and livestock resources.
- b) Mining resources of the area.
- c) Specific opportunities of production of intermediate products for supply to industries of Southern Brazil.
- d) Opportunities for local, Northwest and export markets.

Upon preparation of a list of possible production lines to be established, recommendations will be made for subsequent feasibility studies and main infrastructural deficiencies or any other deficiencies for the development of said industries proposing actions directed to eliminate said inconveniences.

#### Methodology of the Study

A study of this nature requires above all clear criteria and straight focusing of the socio-economic reality of the zone within the frame of the market economy where that area develops, in order to establish guidelines and priorities.

However, in contrast with the specific requirements of the job to be carried out, the time factor was a basic element in this instance and thus it was necessary to give special attention to methodology in the preparation of the study. In this respect and considering the urgency and a thorough familiarization as deep as possible it was considered necessary to divide the accomplishment of the study into stages of specific nature, each one of them to be used as a basis for the next one, thus being a "start" and "end" at the same time and in a perfectly defined manner.

Above stages are summarized as follows:

<u>Stage</u>	<u>Duration</u>	<u>Purpose</u>
Arrival	.one week	.installation and commencement of work on the area.
Familiarization.	.two weeks	.Basic knowledge of the structures of Brazil and Bahia. Pre selection of lines to be surveyed.
Preparation of research.	.one and a half weeks.	.Visits scheduling. Preparation and study of documents prior to visits.
Research.	.three weeks.	.Visits to industrialists, tradesmen, bankers, etc.
Analysis of research.	.one and a half weeks.	.Study of data obtained through investigation, conclusions and recommendations.
Report preparation.	.four weeks	.submittal of report.

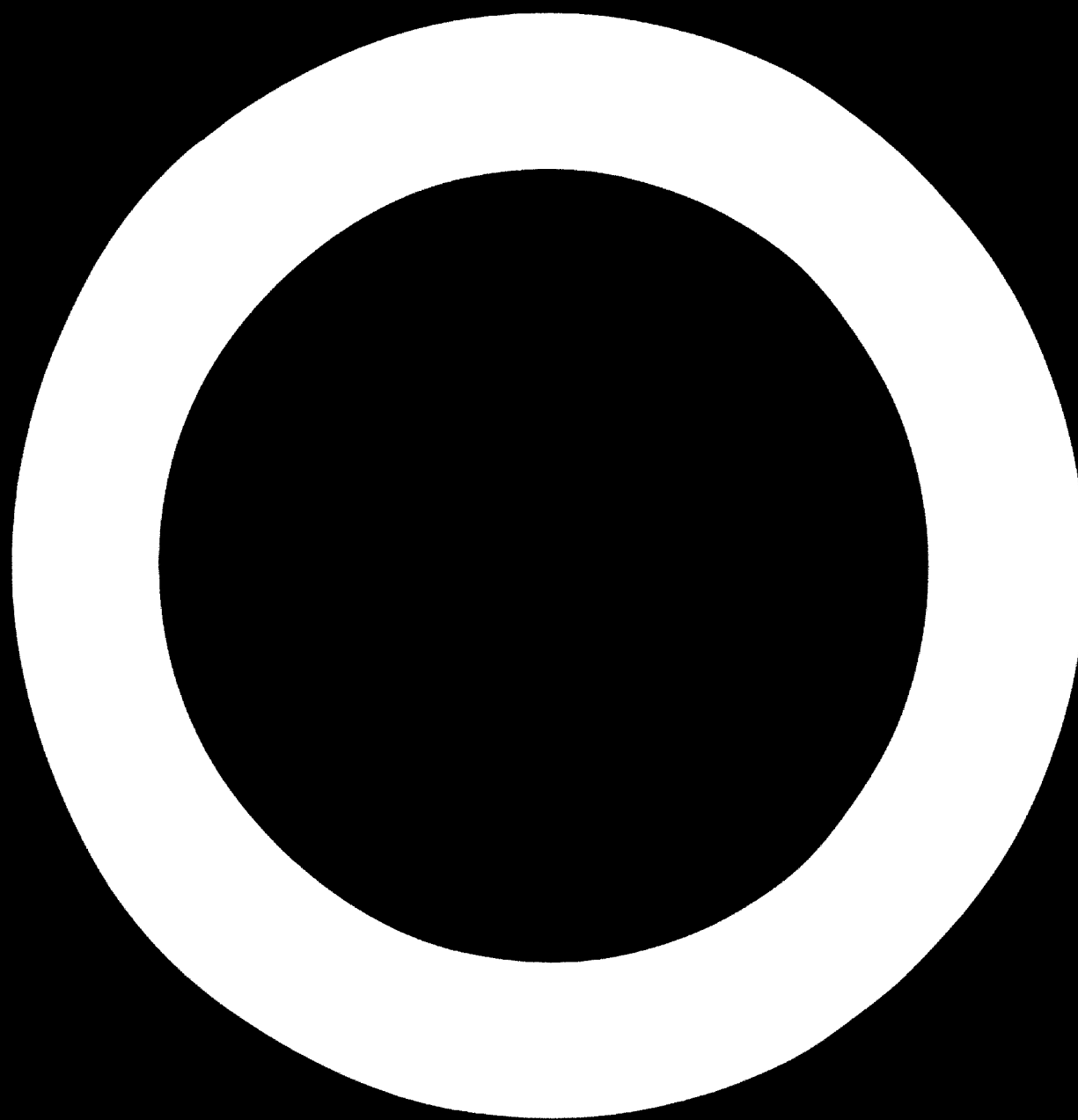
Detailed programming of each stage was carried out with great flexibility. Normally, one programme was established for each week (and shorter periods of time) by the use of "Pert" networks, of elemental nature by reason of its duration and number and variety of actions simultaneously in process.

A complete "pert" of the effective accomplishment of the study was obtained by combining all these partial actions as reflected in the attached chart.

The order of the study keeps of course a certain relation with the order of accomplishment, but excluding the facets of familiarization and others which were merely a conditioning and not an aim of the investigation carried out. Consequently it has been possible to establish an index of matters very much in agreement of paragraph 1.6 of the contract previously summarized in this introduction.

Another factor which determines the order of exposition was the general exposition rules specified in Annex B to contract, which have been observed at all times.

**PRELIMINARY SECTION**





## INTRODUCTION

In accordance with contractual conditions and in order to determine possibilities of promotion of industries in the inland part of Bahia, Tecniberia's team visited many industries, business and institutions of different nature, having an exchange of ideas with the most representative executives of the State. Additionally, the team has analysed the most recent studies and reviewed in cooperation with the personnel of the Secretary, the record cards of the companies established in the inland of the State, which were made in the **PROINTER** program as well as available statistics on production and consumption.

These analysis as well as studies carried out in the first stage of the work on the area on human resources, natural resources, infrastructures, services and productive structures of the state, have permitted to establish conclusions and make recommendations of both generic and specific nature, that is, production lines which can be developed.

## GENERIC ASPECTS

There are aspects of the general economic situation which exceed the scope of this programme, which is fundamentally directed to promote industrial development in the inland part of the State of Bahia. However, said facets of the general economic policy of Brazil have a strong and deep repercussion on the specific aspects of the present programme. Therefore, it is necessary to study practical formulas which will permit to adapt the actions to be taken under such conditions, with a view to future development of the program.

In line with the above, it is recommended that the second phase of the study contain the following items:

.A detailed analysis of financing problems of both fixed and working capital for small or medium enterprises within the monetary framework of present Brazilian "controlled inflation".

.An investigation of federal, State and Municipal taxation systems of Brazil in order to evidence subtle competitive differences, which may arise for similar production lines depending on various locations.

.Formulas to adapt official financing procedures to the peculiar characteristics of small and medium industry, including simplification of same and possible connection with private financing groups.

#### POSSIBILITIES OF GLOBAL ACTION

There are also certain problems of generic nature which appear to be a constant for most of the existing industrial concerns, which are a preliminary condition prior to any policy of industrial development to be implemented in the state. Among these problems are fundamentally the little attraction to industrial investments on the part of private saving sector both local and foreign, the insufficient professional capability of some of the most aggressive business men and the shortage of medium level technicians; technological problems which can be solved by a specialized technical assistant and the lack of a system of basic industrial supplies.

In view of the above, the following recommendations are made:

- . Conduct and divulge market studies in order to attract possible national and foreign investments
- . Strengthening and extension of existing training programmes for high managing personnel, especially in the sense of organizing and promoting contacts among the entrepreneurs in order to have an exchange of experiences.
- .. Temporary contracting of foreign medium level professional technicians in order to solve the most serious problems in the operation of productive units in operation.
- . Intensification and promotion of medium level technical training programmes and professional package programmes.
- . Organization and supervision of a procedure for specialized technical assistance for medium level entrepreneurs in the area.
- . Research of necessities of industrial supply for the concerns in the area, and specific deficiencies found and possibility of establishing formulas including cooperatives to establish warehouses in order to cover such necessities.

#### PRIORITY OF GEOGRAPHIC LOCATION AND COORDINATION OF ACTION

In view of certain difficulties observed in primary stages of industries already in operation in inland Bahia, it seems timely to consider maintaining a general line of coordination and concentration of efforts in the first

phases of the programme considered.

Therefore the following recommendations are made:

- .That many of the actions to be taken on the sector be considered globally, due to the existing inter-relations among them.
  
- .That a certain order of priorities be established for the location of new industries, focusing the efforts on those which offer better specific possibilities, either by virtue of location or by the degree of industrial interest that they have demonstrated. Namely, Feira de Santana is presently considered as the city that offers a larger immediate interest for the establishment of medium and small size industries, and consequently the efforts of the first phase of the programme must concentrate on this city. This does not imply that development production lines should not be promoted in other possible locations in accordance with their best characteristics.

#### SPECIFIC ACTIONS FOR INDUSTRIAL PROMOTION

It has been deemed adequate to follow an order of priorities within the scope of possibilities offered by the State of Bahia for the establishment and development of industrial productive lines.

The order corresponds to the following criteria:

1) Maximum urgency will be given to actions:

- a) that may avoid on time the inadequate use of resources existing in the State.
- b) that are industrial opportunities of easy and rapid promotion and have a wide market together with an easy establishment.;
- c) which are a condition prior to future industrial development of the State.

2) Industries whose development in the interior of the State do not present in principle serious prospects of collapse, neither for market reasons nor for resources reasons, are to be developed subsequently.

3) Any specific action with respect to promotion in inland Bahia of industries whose adequate development should be assured by market forces alone is not to be taken into consideration at the moment; nor is action to be taken in support of those industries whose difficulties, as evidenced in the study, do not seem to be compensated by the existing opportunities without the previous assurance of a strong and advantageous position in the interior Brazilian market or in world markets.

### PREFERENT INDUSTRIAL PROMOTIONS

The following production lines are included in the first group of actions with top priority:

## A.- FOODSTUFF INDUSTRIES

- Meat industries ( beef and pork ). It would be necessary to eliminate certain deficiencies - which are observed today - in sanitary and fiscal control of slaughter houses; facilitate the reduction in number of retailers and complete the production cycle by establishing an integrated slaughterhouse, refrigeration, cold meat manufacture and canning.
- Poultry industry. To be promoted in accordance with the development of compound baits and in exploitation of adequate dimensions.
- Dairy industry. Immediate promotion of industrial treatment of milk (pasteurization, sterilization, etc.) by establishing dairy plants with an adequate collecting system. The sale of untreated natural milk is to be abolished.
- Sweets and canned food industry. Production promotion among companies with sufficient capacity to insure collection and supply of raw materials, large scale commercialization and innovations, with a view to introduction in international markets.
- Compound baits. To be developed in connection with poultry industry.

## B.- FINE WOODS

Insure an adequate forestry policy for conservation and development of resources of fine woods and promote integral development within the area of the State.

## C.- TEXTILE AND READY MADE ARTICLES.

Co-ordinate the various production phases with a view to specific development of the ready made line and promote its competition capacity, which is limited today due to the lack of raw materials and other additional difficulties.

D.- LEATHER AND FURS

Re-structuration and modernization of existing industry, coordinating with improvement of production and supply of raw hides through action to be taken in slaughter houses (recommended in the line of meat industry).

E.- NON FERROUS METALS

General promotion of mining and metallurgy in the State. Support to immediate exploitation of copper ore resources and establishment of a derivative metallurgy studying the convenience of locating this industry near the copper mines.

F.- BASIC IRON AND STEEL INDUSTRIES

Insure local supply of basic siderurgical products, especially light shapes and sheet metal and proceed to re-structure or establish production lines of foundry and forging.

G.- METAL PRODUCTS

To promote development of productive units of hardware tools (mainly for agriculture) and light carpentry, bearing in mind the extent of the market and the improvement of base resources in accordance with recommendations in "basic iron and steel industries".

H.- PETROCHEMISTRY AND BASIC CHEMISTRY

Activate as much as possible the correct accomplishment of existing plans in order to create fabrication lines of basic chemicals and coordination with basic chemical industry connected to them.

I.- DIRECTIONS

Search of opportunities for sub-contracting erection and handling of these activities based on abundant availabilities of low priced labour.

OTHER PRODUCTION LINES TO BE PROMOTED AT LONGER TERM

As for industrial production lines to be promoted as a way to consolidate the economic development of inland Bahia, the following are to be mentioned:

A.- FOODSTUFF INDUSTRIES

- Integrated dairy industries. After fulfilling basic necessities of milk supplies, it will be necessary to develop this production line not only with a view to local market but with a view to supply other states. Action to take must be integrated including creation and improvement of pastures (clay irrigation) improvement of livestock and milk industrialization, for liquid, dried and condensed milk (taking advantage of the sugar resources of the area) and derivatives production (butter, cheese, yoghurt, etc.).
- Canned green vegetables industries. This is a normal way out for the production of new irrigation areas under way, and will have to be in accordance with such irrigation plans.
- Canned fish industries. The fishing sector of the State should be strongly improved by the establishment of these industries with a view to both local and federal market.



**B.- LEATHER AND FURS**

- Special Leathers. The great availability in the State of leather such as Gato do Mato, Veado, Lizard, etc. make it advisable to avoid sales in bulk, organizing the tanning of these leathers and: even commercialization and manufacture of handicraft goods, taking the plans for tourism into consideration, which is an equivalent to increase of the potential market for these products.

**C.- FOOTWEAR**

To promote development of this production line which is still in an elementary stage after review of the possibilities both in the market as in availability of raw materials such as leather, plastic and rubber.

**D.- NON METALLIC MINERALS**

- Sanitary porcelain. Taking into account market availabilities and existence of basic raw materials, as well as almost non-existing production it is necessary to improve this line in accordance with housing construction programmes sponsored by the B.N.M.
- Insulators. It would be important to develop this line which has evident market possibilities, and is apt to be integrated in the future - together with copper industry - in lines of production of electrical equipment of high specialization and high aggregated value.

**E.- RUBBER**

- Miscellaneous rubber products. It is deemed advisable to consolidate the development of this industrial

sector supplementing its operation with the analysis of possible production lines such as pressed planks, tubes and hoses and general technical articles.

F.- METAL TRANSFORMERS

- Establishment of a production line of small motors and pumps, mainly for agricultural uses, based on a sufficiently ample market and availability of castings.

Development of fabrication of other products derivatives from castings (bath tubs and other glazed sanitary items).

Analysis of the possibilities of installation of erection industries, mainly equipment and small electric machines (measuring equipment) and electronic material.

NECESSITIES OF RECONVERSION

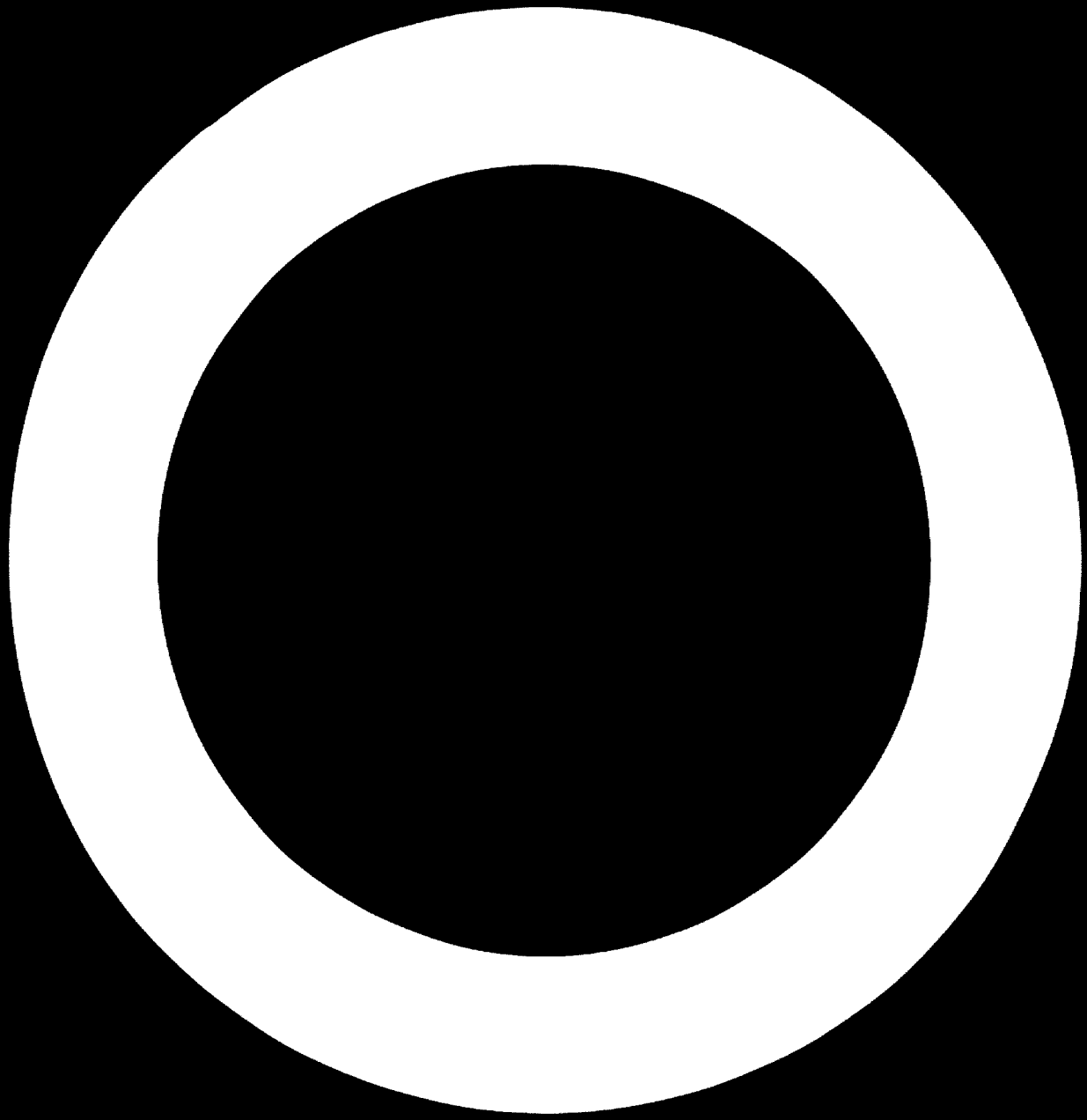
Finally, and aside from the promotion programme for new industries of inland Bahia, it is necessary to mention the fact that an adequate policy of industrialization could not omit actions for the reconversion of certain traditional production lines such as industries deriving from tobacco (cigarettes and cigars) vegetable oils, textile, and standardized furniture manufacture.

In fact, in above mentioned lines we have observed problems of proliferation of plants of inadequate dimensions, and the result is that existing opportunities to achieve large scale production with lower prices are missed. Large scale economy would increase competition capacity of these lines, since

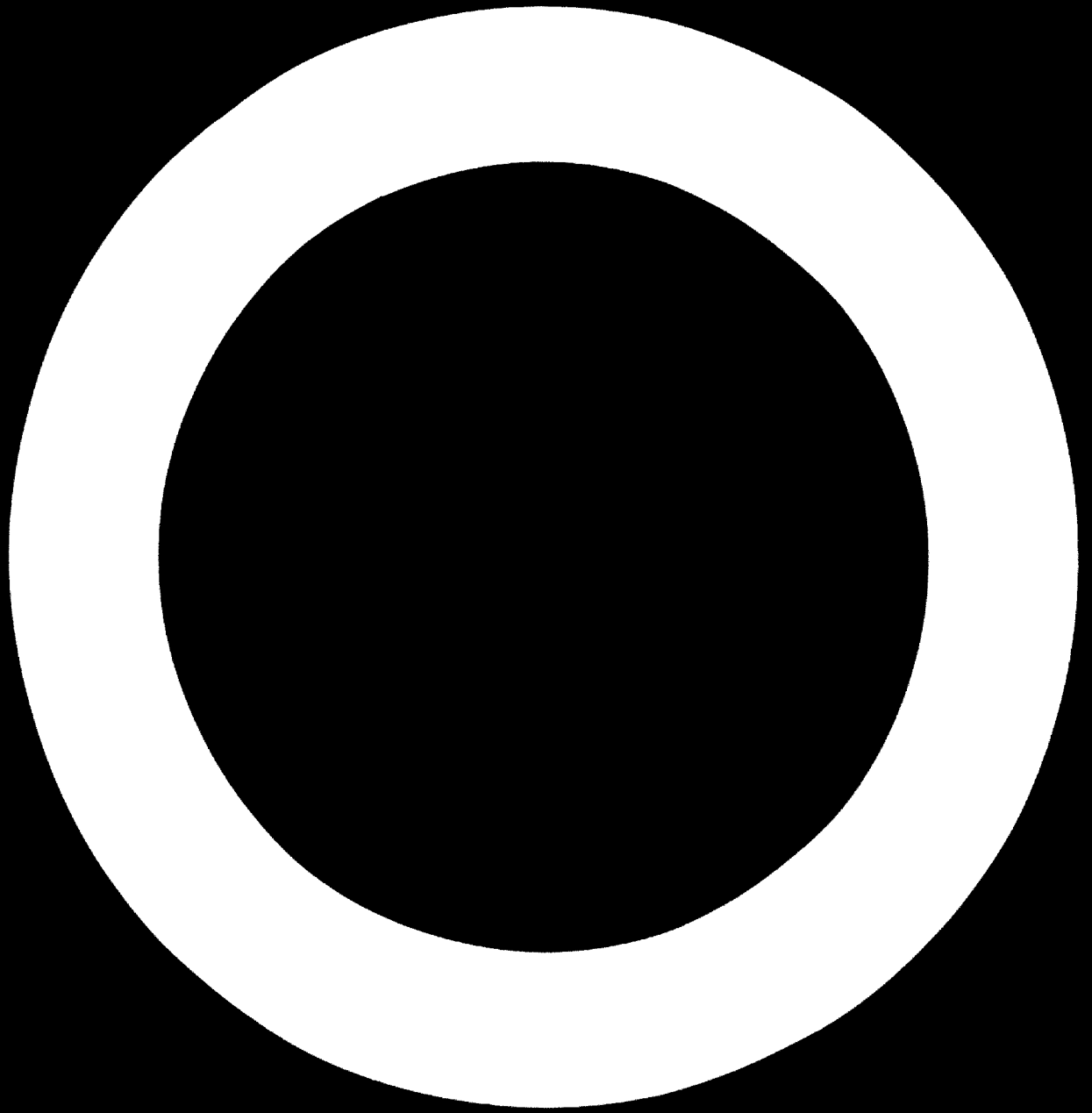
possibilities of evolvement are evident.

Another fundamental aspect to be considered is the improvement of commercialization, especially for those enterprises which have been placing most of the production out of the State of Bahia.

**FIRST PART: BASES OF DEVELOPMENT AND  
INDUSTRIAL PRODUCTIVE  
STRUCTURES OF THE ZONE.**



1.1. INTRODUCTION



## 1.1. INTRODUCTION

In accordance with conditions established in paragraph 1.03 of the contract, this study must commence by an analysis of basic factors to which economic development is conditioned, namely, work, infrastructures and services for the industry. Study of industry already established in the area will be made afterwards.

These first sections are certainly the necessary preliminary analysis in order to study possibilities of industrialization of inland Bahia, which will be studied subsequently.

It has been considered however, that these various initial sections of study of factors which determine the development and existing productive structures, could be correctly integrated in one section only, thus becoming the First Part of the Study.

This way besides simplifying the presentation of the work, it is expected to facilitate the understanding of both the starting bottlenecks for the industrial development of inland Bahia and the knowledge of the most urgent problems of industrial re-structuration which affect the industry already established in Bahia. These problems may be due to deficiencies of the infrastructure, services, availability or skill of labor, or due to structural or organizational defects of the industry in operation.

It has also been timely to include in this First Part the fiscal and financial incentives presently in force to favor the industrialization process of the state, since this institutional basis is one more structure and will be a condition for both the results observable today and future possibilities of action.

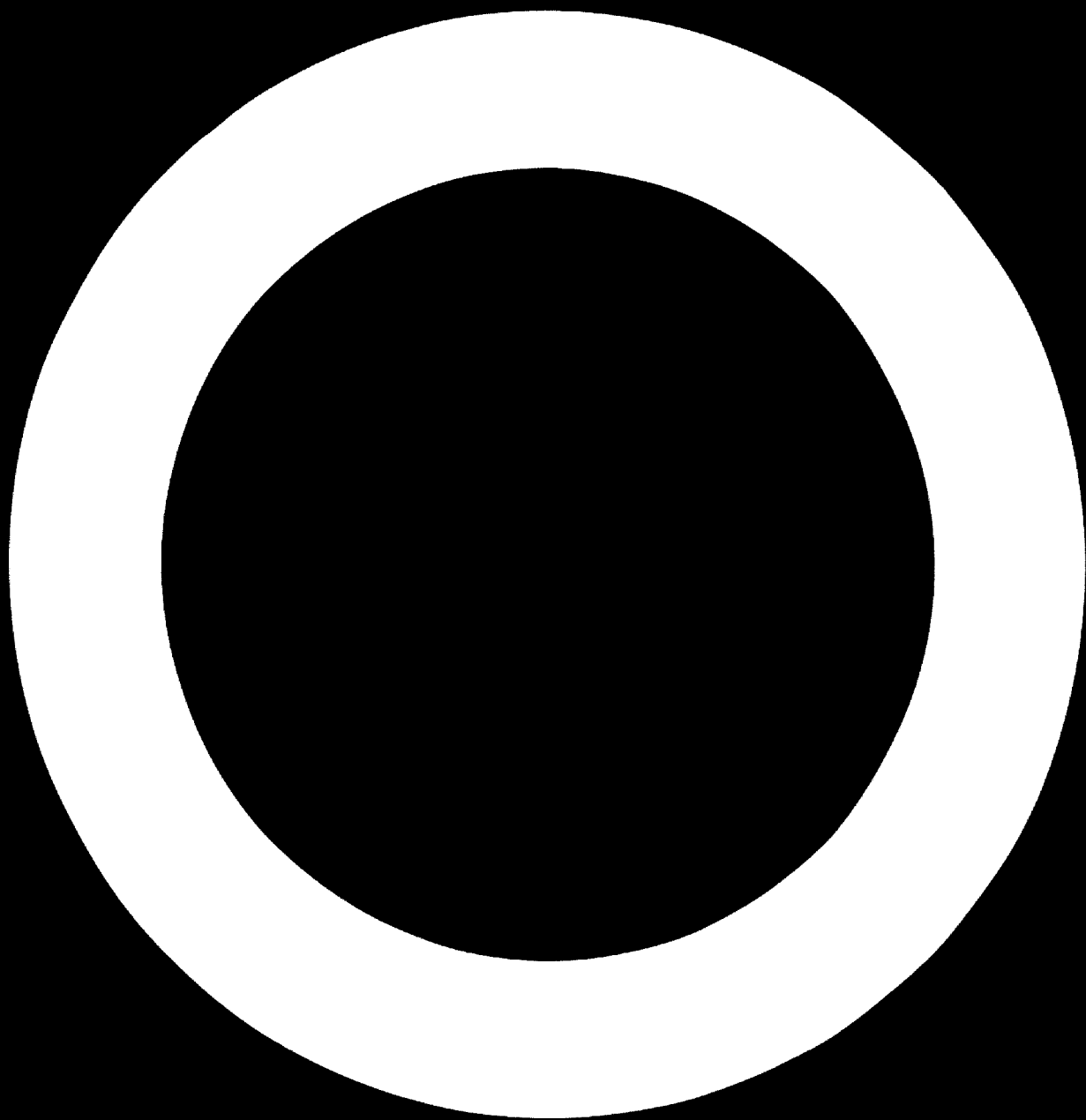
Summarizing and in accordance with the aforesaid this First Part of the Study will consist of the following items:



- Elemental geographical description of the State.
- Manpower resources.
- Infrastructures.
- Natural resources.
- Institutions and incentives of Public Sector for the promotion of the industrialization.
- Services for the industry.
- Structure of industrial production.

It is to be pointed out that above order is intended to analyze firstly all the conditions of the process of industrialization carried out "de facto" up to this time in Bahia, describing afterwards its process and present levels reached by the production of the Secondary Sector. All this will be used as the starting point for the study of the possibilities of establishing industries in the inland. This matter will be considered in the Second Part.

1.2. ELEMENTARY GEOGRAPHICAL DESCRIPTION OF THE STATE



## 1.2. ELEMENTARY GEOGRAPHICAL DESCRIPTION OF THE STATE

The state of Bahia, in the Northeastern part of Brazil, with 561,026 Km<sup>2</sup> area and a population of about 7,000,000 inhabitants, is located within the following extreme geographical coordinates (drawing 1.2.1):

### Latitude

Extreme North 89 32'00"

Extreme South 189 20'45"

### Longitude WRG

Extreme East 379 19'39"

Extreme West 469 34'36"

The longest distance in the North-South direction is 1,086 Km and 1,013 Km in the East-West direction.

The orography of the State consists of a costal strip with altitudes below 100 m; altitude increases gradually in the East-West direction to the center part of the State with altitudes above 900 m; from there altitude decreases until reaching values below 100 m in the basin of the Sao Francisco river. Finally in the most western part of the State exist altitudes between 700 m and 900 m

Hidrographically, the state has important streams of water, among which the Sao Francisco river is the most remarkable. It origin is in Minas Gerais and runs across Bahia from South to North forming a geographic border during a part of its course between the states of Bahia and Pernambuco. Some other important are the Itapicuru, Paraguassu, SW Contas, Pardo and Jequitinhonha, which runs across the heights between the coast and the basin of the Sao Francisco river (Drawing 1.2.2.).

From the pluviometric point of view the variations are very important. On the Coastal zone levels are reached between 1,000 mm and 2,000 mm, rapidly coming down at the Sertao area (located in the central part of the State, and more specifically in the Center-North East) reaching levels of about 500 mm.

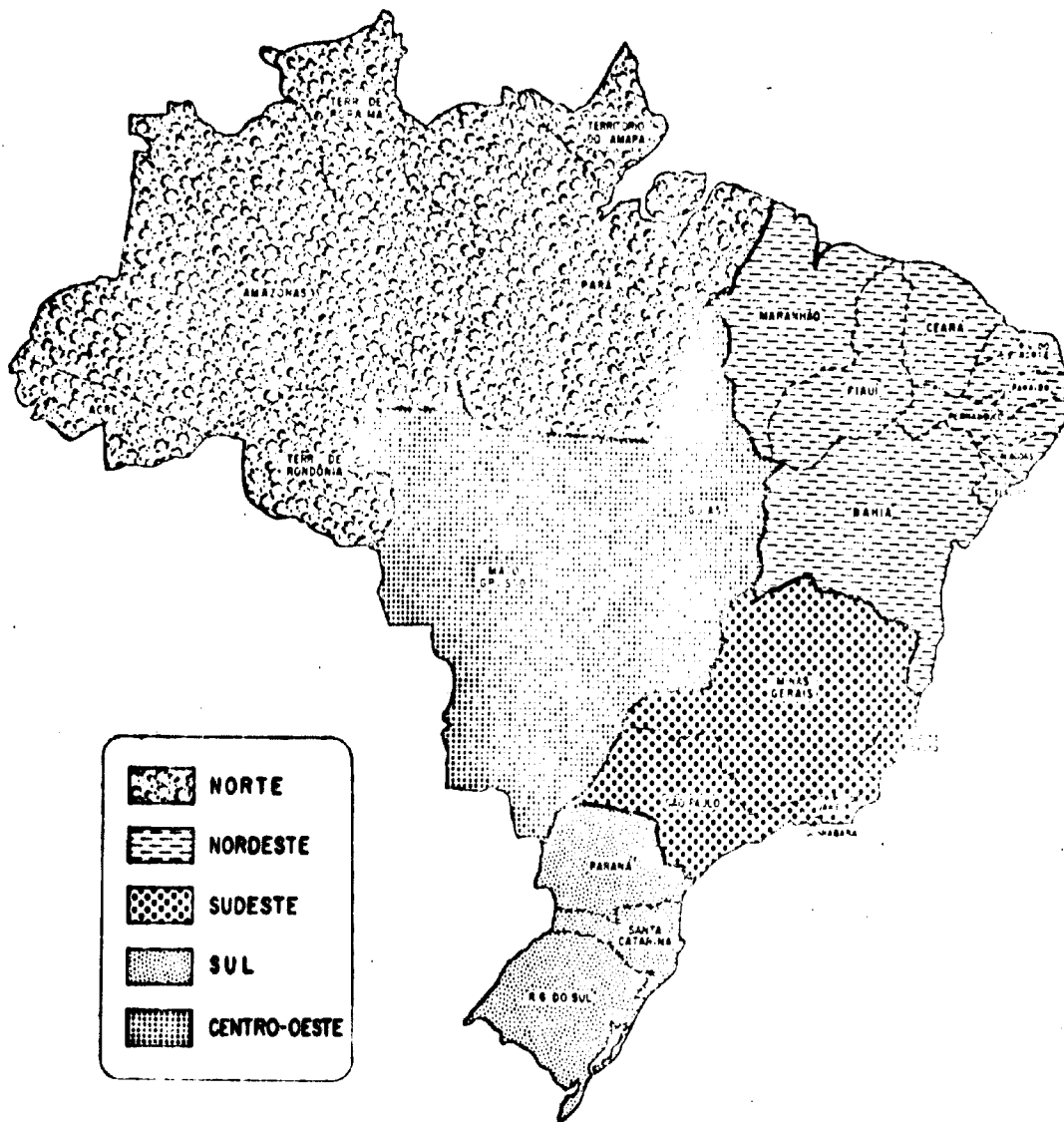
It should be noted that these rainfalls occur during a very short period of time, generally during a few weeks in Winter time, which originates long periods of drought during most of the year, with the natural limitations for the development of vegetation in this area. West of Sao Francisco river rainfall levels increase again up to 1,250/1,500 mm/year, this becoming a land with the characteristics of the Mato of Western Brazil (drawing 1.2.3.).

In Brazil there is no intermediate politico-geographic division between the State and the municipality. Presently efforts are being made to define physiographical areas, similar to our idea of county or natural region. A study carried out by the Secretary of Industry and Commerce in 1964 selected a total of 16 physiographical areas in the state of Bahia which are shown on drawing 1.2.4.

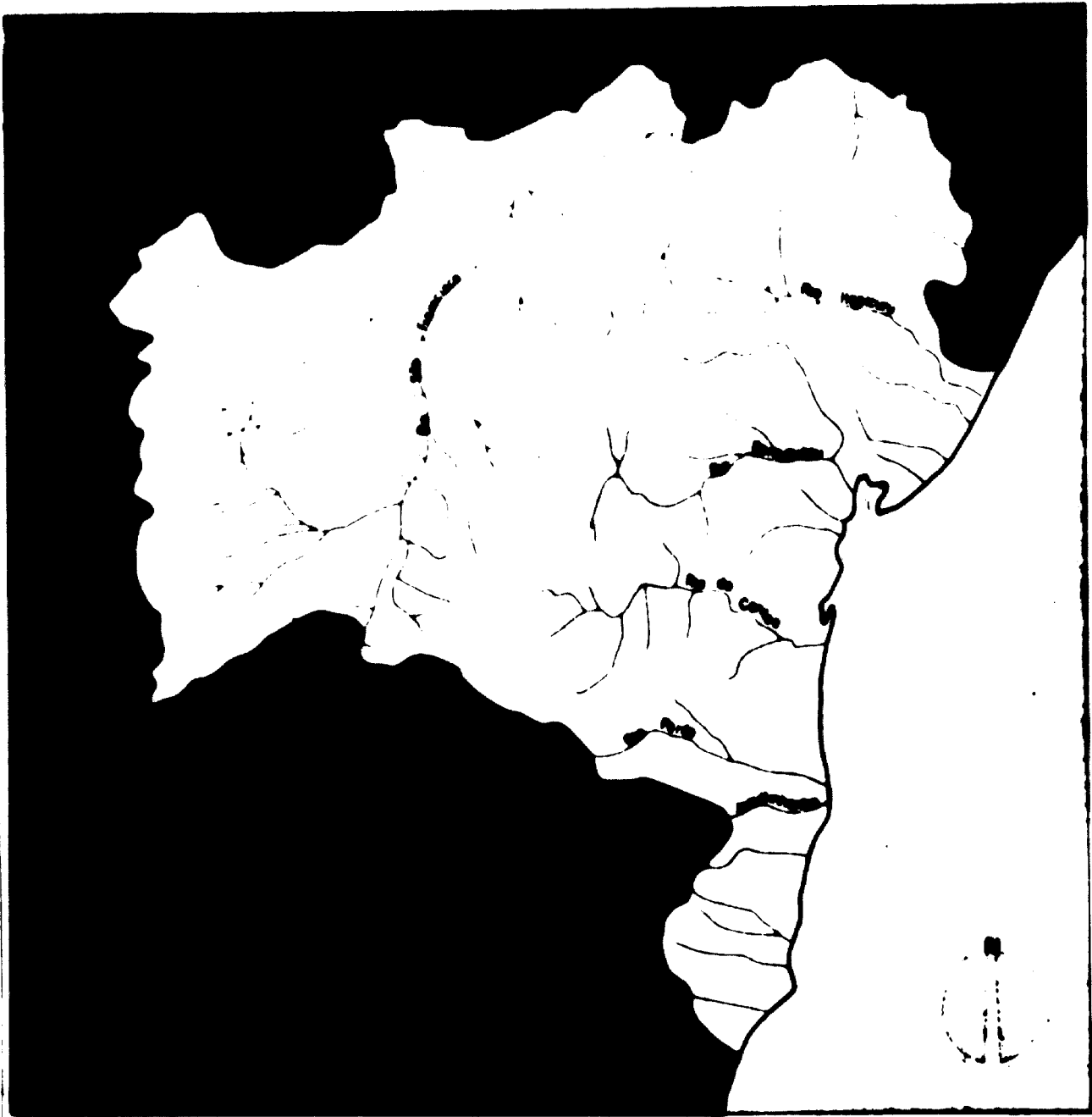
These physiographical areas have been recently reduced to 5, although there is no information in respect to the criteria which led to above division. In a strict sense, the differentiation between the coastal area and the cocoa area, the Frontier-region of Sertao, the Sertao itself and the region west of Sao Francisco river, would suffice.

As shown by the analysis of the population survey, the greatest density of population is found at the coast, the most important populations being Salvador and the area of Reconcavo at the North, and Ilheus and Itabuna at the South. The remaining areas of the interior are very sparsely populated; only the municipalities of Feira de Santana, Alagoinhas, Vitoria da Conquista and Jequié are worth mentioning, all of them with a population over 75,000 inhabitants.

# GRANDES REGIÕES



PLANO 1-2-1  
BRASIL



PLANO 1-23

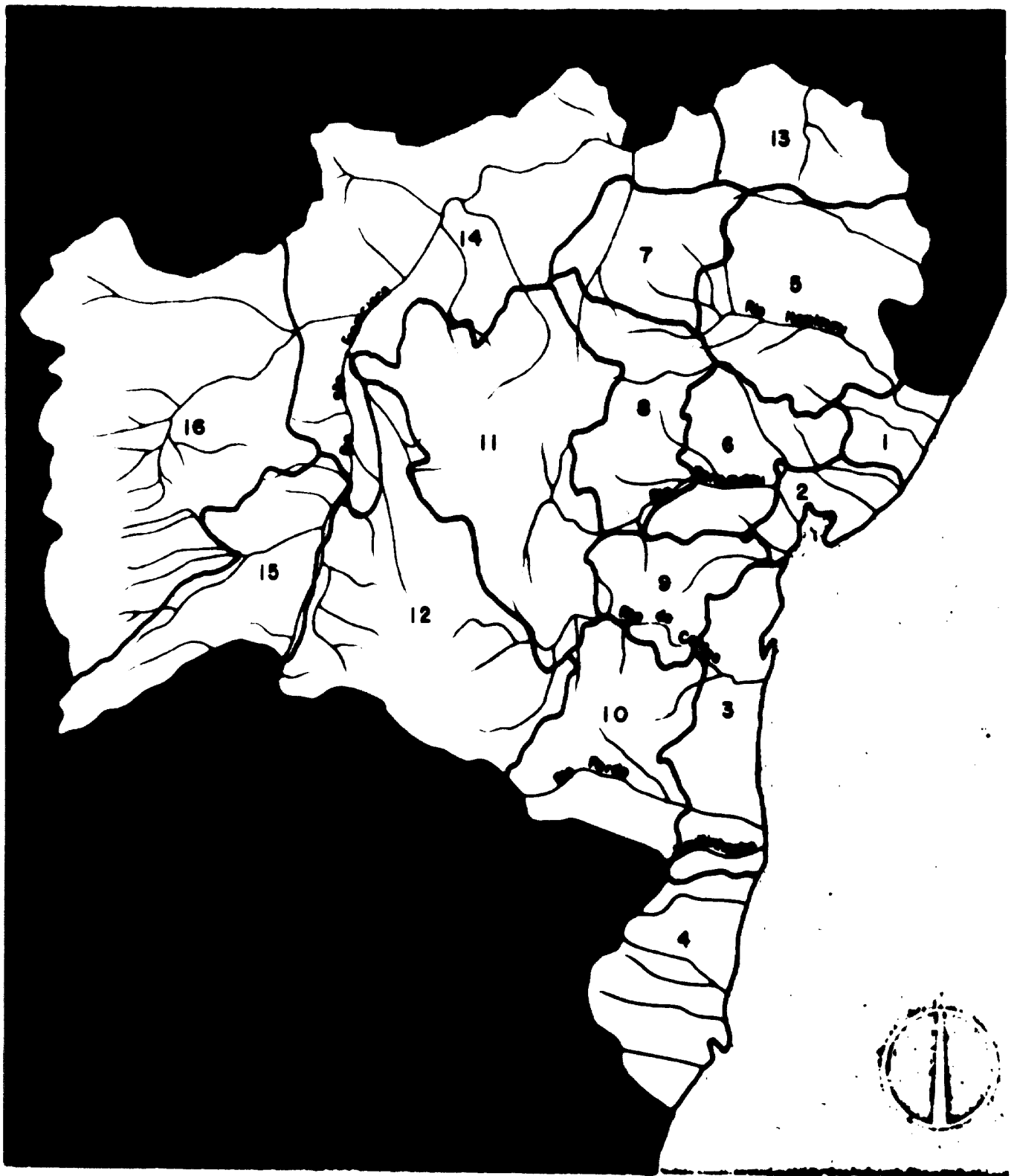
HIDROGRAFIA DE BAHIA



PLANO 1-2-3

PLUVIOMETRIA DE BAHIA



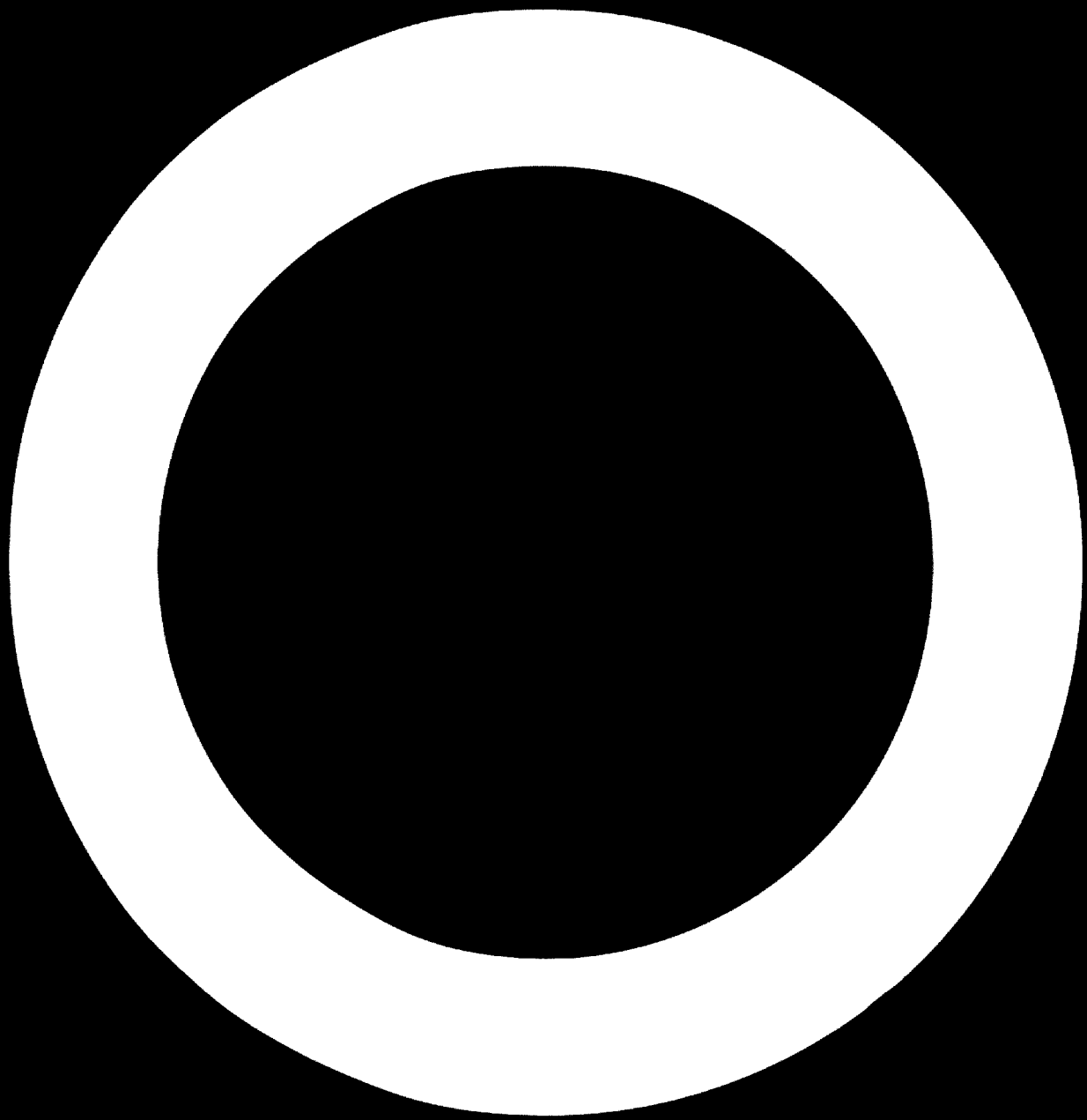


- |                      |                              |
|----------------------|------------------------------|
| 1 LITORAL NORTE      | 9 JEQUIE                     |
| 2 REONCAVO           | 10 VITORIA DA CONQUISTA      |
| 3 CACAUERA           | 11 CHAPADA DIAMANTINA        |
| 4 SUL                | 12 SERRA GERAL               |
| 5 NORDESTE           | 13 SERTÃO DO SÃO FRANCISCO   |
| 6 FEIRA DE SANTANA   | 14 BAIXO MEDIO SAO FRANCISCO |
| 7 SENHOR DO BOMFIM   | 15 MEDIO SAO FRANCISCO       |
| 8 ENCOSTA DA CHAPADA | 16 BARREIROS                 |

PLANO 1-2-4

REGIONES FISIOGRAFICAS DE BAHIA

1.3. MANPOWER RESOURCES



### 1.3.1. EVOLUTION OF POPULATION AND DEMOGRAPHIC INDEXES

The population of the State of Bahia in 1960, according to census data of early September same year, amounted to 5,990,605 inhabitants, which means 8.41% of the total population of Brazil, and 26.7% of the population of the ten States of the Federation which integrate the northeast region.

In 1872, when the first Brazilian demographic census was made, Bahian population reached 1,376,616 inhabitants, which was 13.9% of the entire country, remarkably exceeding the population of other States of the Federation, such as Sao Paulo, which is now demographically larger.

However, although demographic growth has been very important, as it became over four times larger in less than 100 years, its growth has been lower than that of the overall Country along all these years. But concretely, in the last inter-census period 1950-60 the cumulative annual rate of growth was 1.8% against 3.1% for Brazil and even higher rates for the most progressive states of the federation.

Birth rate in the State, 4.6% approximately is, on the other hand, slightly higher than the total for Brazil and so is the fertility index (nearly two hundred born alive per one thousand women in fertile age) as corresponds to their predominant racial characteristics and socioeconomic factors: mixed race populations in essentially rural environments with low income levels. But death rate in the State, over 2%, is much higher than the average for the Country (only the capital, Salvador, has death rates similar to those of other large towns of the Federation). Life expectancy of Bahians is very low, less than 45 years, and is strongly influenced by a high infantile death rate.

There is no information about migratory internal movements, but a comparison between vegetative growth rate and the real one of the Bahian population evidences a mean annual migratory balance of about fifty thousand people moving to other more progressive States of the Federation, urged by lack of employment opportunities in their places of origin. A movement of population within the State from rural areas to the capital and other important urban centers has also been recorded.

In 1970 the estimated population of Bahia is over seven million inhabitants, and a population a little over 8.5 million is expected by 1980 and almost twelve million by the end of the century, if actual rates are maintained. Even if birth rates change a lower demographic growth is not expected since, logically, death rate will be gradually reduced as health conditions and living standards improve.

1.3.2. GEOGRAPHICAL DISTRIBUTION. CITY AND COUNTRY POPULATION. MAJOR POPULATION CENTERS.

The demographic density of the State, with a surface over half a million Km<sup>2</sup> is very low (12.8 inh/km<sup>2</sup>) although higher than mean density for the Federation, but it is not so considering the Amazonic and center-western territories, characterized by a great demographic emptiness (the density corresponding to the northeast, southeast and southern States altogether is 23.4 inh/Km<sup>2</sup>). Even within the northeast, Bahia is one of the less populated States in proportion with the area of its territory and if we take in to account that a large percentage of the population concentrates in the narrow strip of the Atlantic coast, similarly as it happens in the rest of the Country it is clear that density in the interior of the State is much lower.

14% of the State's population is concentrated in the capital of the State, with a population of about a million people estimated for 1970 and the Reconcavo zone, which actually may be considered as a large integral area, has over 1.6 million, or 22%.

Municipalities with more than 50,000 inhabitants in 1968, within the State, besides Salvador, are Feira de Santana (113,000) Ilheus (100,000), Vitoria da Conquista (90,000), Itabuna (87,000), Jequié (84,400), Alagoinhas (75,000), Jacobina (60,000), Ipirá (54,400) and Sto. Amaro (53,800).

Feira de Santana is the major town in a region of almost half a million people where Ipirá is located also. Ilheus and Itabuna are within the same natural micro-region, with a total population of nearly six hundred and fifty thousand inhabitants; Vitoria, Jequié and Alagoinhas are the heads of their respective areas with over three hundred and fifty thousand inhabitants each; a little lower is the population corresponding to the region of which the head is Jacobina, Sto. Amaro is located in the region of Reconcavo.

The municipality with a higher number of inhabitants besides those already mentioned, without reaching the fifty thousand figure is Juazeiro, which in turn is the head of a region with 88,000 inhabitants and that really forms a single urban unit with the Petrolina town in the adjacent State of Pernambuco, head of a region with 120,000 inhabitants.

Another important center is that integrated by the municipalities of Senhor do Bonfim and Campo Formoso, with more than 35,000 inhabitants each, within a region of 150,000 inhabitants.

The population of the various areas subject of this survey, amounts to almost 50% of the total population of the State.

In terms of city and country populations, the ratio within the State is 3.5 to 6.5.

The major city centers correspond with the location of the above mentioned municipalities.

All the above are centers of demographic attraction, having growth rates much higher than those of the State. Specifically city population growth in Salvador was 4.5%/year during the last decade.

**1.3.3. POPULATION PYRAMIDS. POTENTIALLY ACTIVE POPULATION.**

There is no full information in regard to the composition by sex and age of the Bahian population, since data of last census made in 1960, have not been used because important defects are contained in it. The only available data are to be considered merely as a sample and refer to the northeast States altogether but can be admitted as quite explanatory. According to said data, the distribution curve of the Bahian population show similar characteristics to those of Brazil. In any case, it presents characteristics a little more remarkable in its flat shape, which is a characteristic of eminently young populations defined by high birth and death rates.

Of the seven millions of Bahians existing in 1970, it can be estimated that 3.4 are men and 3.6 women. Of these, three million approximately are under fourteen, and a little over a quarter of million are over sixty five years old. Potentially active population, that is to say, between 15 and 64 years, amounts to 3.7 million approximately, and of this total 1.76 million are men.



1.3.4. ACTIVE AND WORKING POPULATION, SECTORIAL DISTRIBUTION OF WORKING POPULATION.

Active population according to sample reports represents about 2.5 million people; of which 1.7 are men and eight hundred thousand are women. So, masculine active population is equivalent to the potentially active one, in spite of the fact that the employment of both infantile and senile labor is important. Female participation in the economical activity is short, especially considering that most of the women that take part in labor force are occupied mainly in seasonal work, basically related to country jobs, or only help to their relatives running small shops or industries.

It is very difficult to determine the volume of labor really occupied in the various economical activities. It is also impossible to determine figures of unemployment, for very little meaning would be rendered by any report about people actually registered as seeking employment, because more important than the definitive lay-off are the various existing forms of sub-employment, which are really abundant, specially in cities where all kinds of services are offered, such as car washing and watching, ambulant sellers, shoe shining and in the country areas it is evidenced by a general low level of activity during most of the year.

The only available data which offer greater reliability are those gathered from agricultural, industrial, commercial and services census, of 1960, because that for the present year is actually under way; but in any case there is no reference to the total economical activities (as far as the tertially sector is concerned) and must be completed with estimations based in sample results for geographic ranges larger than the State itself.

According to this Census it can be said that Agriculture occupied 1.8 millions of Bahians and that, since the industry did

not occupy at that time more than 65,000 people (including in this consideration mining, processing and constructions industries), there were more than 150,000 people developing their activities in the services field.

From the total of 1.8 millions of people-occupied in Agriculture and other extractive activities connected directly to the primary sector, over-half a million were women receiving no pay for their work since they were considered as relatives depending from the principal responsible of the exploitation: and masculine infantile labor partially or fully occupied in agricultural jobs, were over one hundred an seventy six thousand people. Therefore, deducting this figures, it is found that the actually occupied population, all sectors included, were 1.8 millions instead of 2,5 millions quoted at the beginning.

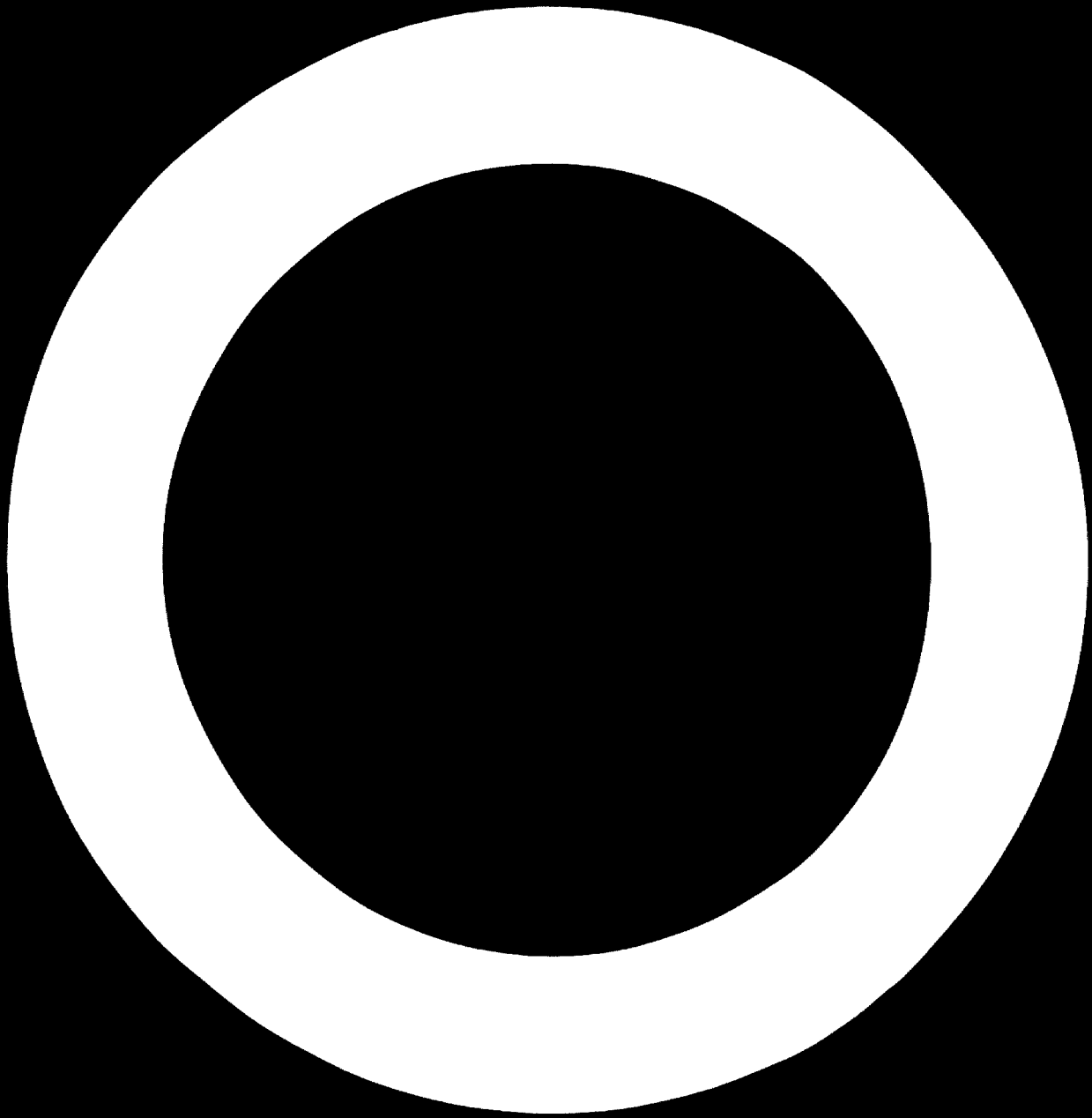
Estimations for 1970 show that, basically, there has been no change in the number of occupied people in agricultural, cattle and animal and vegetal extraction sectors. It is possible that the increase has taken place up two millions (Keeping in mind demographic growth and at the same time the exodus from rural locations). This figure includes women and children helping in agricultural jobs.

It is difficult to establish the number of people occupied by the industry. Cadaster from 1960 gave a total of 50,023 occupied people, but - this figure of employment did not include either construction nor services for electric power; though it did include people occupied in handicraft shops with less than 5 people per shop. In 1965 this figure of 50,023 from the census of 1960, had increased to 56,669 according to IBGE's "Industrial Re -

Register". However, industrial cadastre made in 1970 by the Industries Federation of the State gave a total of over 75,000 people, also without including - the construction, electrical services and handicraft fields. So if in the construction, industry and electrical services it is possible to admit up to sixty thousand people working, and in the small industry handicraft type, the figures from 1960 are maintained as a minimum we can obtain a total figure of 150,000 to 175,000 people, as a maximum occupied in the - secondary sector, which means 8% of total occupied population.

Active population occupied in Services can be estimated between 250,000 and 300,000 people; - being impossible to be more exact due to the estimative nature of evaluations and the conditioning factors in regards to above mentioned employment, lay-off and sub-employment.

1.4. INFRASTRUCTURE



1.4.1. INTRODUCTION

This description has not been prepared for the purpose of reflecting in full detail the infrastructural conditions of the State of Bahia, as this task would go beyond the scope of this study. We only try to define the infrastructural aspects, and mainly the most important of them, all within a wide framework which will allow to identify the major problems which can arise in the development of certain industrial sectors with true possibilities of promotion in inland areas.

It is not believed in principle and after observations made that the existing infrastructural problems of Bahia can be serious limitation for the desired development of the inland part, at least in so far as the geographical zone defined by the so called "Centers of development" is concerned.

Such a zone, limited in general lines at the West by the BR-116 national highway from Feira de Santana to Vitoria da Conquista; at the North by the municipalities of Feira, Alagoinhas and Camaraçari and at the East and South by the Atlantic coast and the highway from Vitoria da Conquista to Itapetinga and Ilhéus, is the only one with acceptable infrastructures in Bahia, aside from the area of Senhor do Bonfim, Juazeiro.

This point of view seems to be even more confirmed as the establishment of small or medium industry, which are the main targets, though not the only ones for the development of the interior, does not require, in general terms, great availabilities of power and water, nor transportation of excessive quantities of raw materials or finished products. However, it is obvious that in particular cases when great availabilities of above mentioned services are required, the infrastructural conditions of the zone, which are acceptable only, could become a real bottleneck and, consequently, an additional difficulty for the development.

As for the rest of the State, it is evident that the lack of essential infrastructures more towards the interior of the above defined zone, mainly highways and power, could be a serious limitation for the development of some industrial sector that, which in particular and with adequate resources, could be planned in that area. These problems, when spotted, should be studied in the future after completion of studies of detail of the industrial sectors which are apt for development, sectors whose general definition is the purpose of present study.

Finally, it can be estimated that the area that can be developed in a first stage, defined firstly, has in general acceptable infrastructures, although there are undoubtedly local problems of a particular nature which will have to be solved. For example, the lack of municipal roads with a view to an adequate agricultural operation. However, it seems logical to assume that the solution of these local problems will be an automatic consequence of the development.

1.4.2. ELECTRIC POWER

In 1960 the electric effective power in Brazil was 4,400 MW figure that went up to 10,400 MW in 1969 corresponding to a cumulative mean increase of 10%/year (and 21.000 MW are expected in 1975). Power production, meanwhile, jumped from 22,800 millions kw/hr. to 45,700 millions of kw/hr. (or 8% annual growth the consumption per capita from 327 kw/hr. to 495 kw/hr. respectively.

As for the State of Bahia, there was an effective power of 230 MW in 1960 (5.2% of the total for the country), This figure went up to 720 MW ( 7% of the total for the country) in 1969, corresponding to an annual mean growth of 13.5%. In power production, the figures were 996 millions kw/hr and 3,407 millions kw/hr. respectively, equivalent to 14,5% mean growth. Aproximately 50% of consumption in 1969 was used by the industrial field.

As an essential aspect of the electrical infrastructure in Bahia and, generally, in a large part of all the northeast zone of Brazil, it is necessary to note its dependence from the hydraulic power plant of PAULO AFONSO, located on the Sao Francisco river, at the North of the State of Bahia. The actual effective power is 665,000 kw and distribution in 1969 was as follows:

Pernambuco	:	40%
Bahia	:	29%
Ceará	:	11%
Paraiba	:	8%
Alagoas	:	5%
Sergipe	:	4%
R.C. do Norte	:	3%

However and as a complement for the electric supply to the Northeast, the new hydraulic power plant BOA ESPERANZA, on the Parnaiba river, State of Piaui, has been recently put in service with a nominal power of 108,000 KW.



Power supply to the State of Bahia is based mainly on the PAULO AFONSO power Plant. There is also the FUNIL hydroelectric power plant near UBATA, at the South of the State, recently increased to 30,000 KW by means of a reservoir located in Pedras, down the Contas river. This last power plant, with a load factor of only 0,35, is supplying power to the entire southern zone of Bahia.

Additionally, there is a certain number of steam power plants of small capacity, about 1,000 KW, each driven by Diesel engines and almost all of them as mobile units, which are being eliminated or taken to other zones where there are no transmission lines, since only one third of the State is fully electrified. There is only one steam power plant of a certain importance which is installed at the zone of Salvador, with 10,000 KW power and another one in Vitoria da Conquista, with a capacity of about 5,300 KW, that works independently from the general network.

As for future projects, and since some studies conducted reflect that the electric power should increase as follows:

1970	882 MW
1971	981 MW
1972	1,075 MW
1973	1,192 MW

it is foreseen that the capacity of the PAULO AFONSO power plant be increased to 995 MW in 1971, to 1,160 MW in 1972 to 1,325 MW in 1973 and to 1,655 in 1975.

Likewise, it is expected that the reservoir of PEDRAS, already mentioned, will allow in 1974, besides its present service to the FUNIL power plant, the installation of another 15,000/20,000 KW: It is also expected that the BRUMADO hydroelectric power plant (under study) with 10,000 KVA capacity and located on the Brumado river, tributary of the Das Contas River, will supply power to the nearby zone,

rich in important magnesite and lead deposits and will allow the link with the Correntina system, West of the Sao Francisco river.

On the contrary, it is not likely that the hydraulic power potentially available in Vitoria da Conquista will be fully used, for this project seems to be little profitable with 20,000 KW maximum capacity.

Generally, it can be said that the power distribution scheme for the State of Bahia (drawing 1.4.1.) is based and will be based on a medium term, mainly on the production of the PAULO AFONSO power station; although it is expected to solve peak demand problems with smaller stations to allow PAULO AFONSO working with a very high load coefficient, thus making more profitable the high investments made in power generating, transforming and transmission equipment.

It is also expected that the FUNIL power station, unless it is increased up to 130,000 KW which seems quite feasible, will work in the future as supplier for peak demand. Also, under study is the installation of the PEDRO DO CALVAHO pum-generator hydraulic power plant on the Paraguasu river, near Sao Felix, in the Recôncavo area with a capacity of about 320,000 KW. to supply peak demand power, at least during the first years. The start up by phases according to needs, is expected to take place in 1973.

The above mentioned electrical scheme indicates that the structure of electric power in Bahia, based on PAULO AFONSO, might not correspond to an optimum scheme if only the State view point is considered, due to the long distances between this plant and major consumption centers. However, it is also evident that the enormous availabilities of hydraulic power in the mentioned location and the need to supply electricity not only to Bahia but also to all other northeast States, made advisable the convenience of installing a large hydraulic power plant on this location, with a view to a more economic supply to all the northeast of the country.

Therefore, and summarizing, it can be said that the electric power system in Bahia offers the following characteristics:

- \* There are large zones in the State, in general the entire West from the vertical of Juazeiro and part of the Northeast of said zone, that presently lack power for which the installation of transmission lines at short term is not anticipated.
- \* The zone of industrial development between the "Centers of development", disregarding possible isolated local problems, is reasonably well prepared from an electric power point of view.
- \* If the expansion projects for the PAULO AFONSO and installation of transmission lines is completed as scheduled, no supply, production or distribution, problems are to be expected for basic power in the electrified zone, which is the third part of the State approximately. However it is possible that, at least during the next two years, there will be some peak demand problems.
- \* The possibilities of hydraulic power in Bahia are very high, not only in regards to the large potencial of the zone of PAULO AFONSO but also in the section of the Sao Francisco river, west of PAULO AFONSO until Juazeiro, and at the South with the Jequitinhonha river, in SALTO DA DIVISA, where possibilities are estimated at 1,000,000 KW. Moreover, the petroleum deposits at the north of the Recon-cavo would allow, if necessary, to install steam power plants using a fuel which is available in the very zone.
- \* Rates for electric power are, in general, quite acceptable and in some cases very small. Average price per KWh. for the consumer, taxes included, is:

US \$ 0.0135 for supplies over 13,800 v.

US \$ 0.0155 for supplies between 2,300  
and 13,800 volts.

having estimated said figures for a load factor of 60%.

For larger voltages and high load factors, contracts  
have been signed to supply energy (at 69,000 volts, 90%  
load factor and high power factor) at US \$ 0.008 KW/hr.  
as well as others for voltage over 69,000 volts, 80%  
load factor, with prices of about US \$ 0.0043 per Kw/hr.  
the latter at the Aratu Industrial Center.

1.4.3. HIGHWAYS

In 1960 the highway network covered 475,000 Km, of which 31,500 Km were Federal highways, 84,000 Km belonged to the various States of the country and the rest were municipal roads or side roads. From this total, hardly 11,500 Km were adequately paved. At present time a 1,050,000 Kms network is estimated of which 55,000 Km are Federal and 135,000 Km belong to the various States, with 43,000 Km of paved highways and some other 5,000 Km which are being paved.

As for the State of Bahia, which has about 70,000 Km of highways, and 8,000 Km more under construction, it is noticed that, in general there is lack of - adequate infrastructure, not only because of extension and density of the network, which is a problem especially noticeable in the entire zone West of BR-116 highway, but also because of its quality, as most of it is unpaved causing transportation difficulties during the rainy season and low mean speeds in all seasons. This originates high costs and longer transportation time. All this impairs the free transit of merchandise and increases commercialization problems.

However, from a realistic approach to the - situation, the above does not necessarily mean that the conditioning of existing roads and construction of new highways would be justified from an economic point of view, for it is clear that the high resources of capital, indispensable in this type of works, require an adequate planning, by order of priorities, which allow to use such financial resources in those areas where the lack of good communications is causing the most serious limitation for the economic - development.

Presently, and according to these criteria of priorities, the construction is centered mainly on the paving of the Litorânea Brasileira highway (BR-101) - which runs across the State of Bahia, next and parallel to the coast, and extends to other Northern and Southern States. It is partially completed and it is expected to be almost finished and paved in 1973.

Work is also underway in the construction and paving of the Salvador-Brasilia highway (BR-242) in the ARGOIN-SEABRA-IBOTIRAMA-BARREIRAS section, asphalt has been recently laid until IBOTIRAMA, which permits direct connection of the Capital of Bahia with the Federal District and Goias and the development of a wide area of the Alem-Sao Francisco, in Western Bahia.

As for the geographical region limited by the so called "Development Centers", namely the zone contained among the towns of Ilheus, Itabuna, Conquista, Jequié, Feira de Santana and Alagoinhas, exception made of Juazeiro, the infrastructural situation is considerably better than that of the rest of the State, with the already mentioned BR-116 and BR-101 highways (the former fully paved and in good condition, the latter partially built) which define said zone to the West and East respectively. There are also two other highways: BR-324 from Salvador to the zone of UMBURANAS, fully paved until JACOBINA, which permits a connection with BR-130 highway from JUAZEIRO, and BR-110 which runs from Salvador to PAULO AFONSO, crossing Alagoinhas, and is paved until RIBERA DO POMBAL; Both of them allow adequate expansion of the centers of development of Feira de Santana and Alagoinhas towards the North.

The existence of transverse connecting highways

between BR-116 and BR-101, mainly BA-205, BA-110 and BR-415, fully paved but in poor condition that connect Ilheus and Itabuna with Vitoria da Conquista, allows to consider that the problem of the communications in the "zone of development" already mentioned, is acceptably solved, although lacking full paving of - transverse connecting highways, improvement of the sub-bases and construction of some others which do not exist, creating a problem for some cities in this zone.

In respect of Juazeiro, located in the limit of the State of Bahia with Pernambuco, next to Petronila, isolated in its proximity to other towns or zones of development in Bahia, has, on the other hand, acceptable communications to the South of the State, through BA-130, paved until Capim Grosso, point of connection with BR-324 to Feira de Santana and Salvador, as well as by the North-ern direction, BR-122 Federal highway, or to the East through BR-235 that links with Sergipe and to the West towards Casa Nova and Remanso, the last ones without pave

There is also a project to extend BR-122 highway until Seabra, which will permit the connection with Goias and its capital Brasilia.

With reference to traffic, the data available show that in general there are no congestion problems, although for this reason the broadening of BR-324 highway has been approved from Salvador to Feira de Santana. In 1971 the broadening of the first 37 Km. will be started. Besides, feasibility studies are under way for the section BR-101 from Alagoinhas to the connection with BR-104 from Salvador to Feira de Santana, as well as paving projects for BR-116 and BR-110 in North Bahia.

Likewise, paving works have been started in BA-052 highway, from Feira de Santana to Mundo Novo, Irice and Xique-Xique, that will connect the regions rich in cattle and cereals of Mundo Novo and Irice with the main centers of consumption of the State.

Summarizing, the highways scheme (drawing 1.4.2.) in the State of Bahia presents the following characteristics:

- \* The zone defined by the so called "Centers of Development", will have acceptable communications through BR-116 and BR-101 highways, providing that construction and paving works finished in the latter. Nevertheless, there are still some points which are badly connected and there is need of paved connection highways, hoping that these problems, at least the majority of them, will be solved in the next four years.
- \* It is necessary to improve the maintenance of some highways that run across the zone of development, as well as the signaling system, actually deficient or non-existent.
- \* In regards to the rest of the State, there are four large highways:
  - BR-324/BA-130, from Feira de Santana to Juazeiro, fully paved.
  - BA-052, from Feira de Santana to Mundo Novo and Xique-Xique, which paving has been started.
  - BR-242, from Feira de Santana to Seabra and Iboti<sup>1</sup>rama, fully paved.
  - BA-630/BR-030/BA-252, from Vitoria da Conquista to Brumado and Bom J. da Lapa, unpaved.

All these highways are an important step that will allow to connect, in due time and by means of transverse highways to be built, with a large part of the rest of the zones in the State of Bahia, East of the Sao Francisco River, which have poor communications nowadays.



\* There are some minor problems, such as:

- Setting of radial municipal highways to allow for an adequate agricultural operation. These problems depend on the roads' consortium.
- Adequate maintenance of existing highways, a problem that, in general, is assumed as acceptably solved for Federal and State highways, but not for the municipal ones.
- Adequate organization of the transport means which are presently operated by small companies.

1.4.4. RAILWAYS

Railway transportation of the State of Bahia is carried out through LESTE BRASILEIRO Railways; with metric gage and single track line, except for short section, is a network with the structure based on a quadrangular arrangement and corners located, two of them very close to each other, at the SAO FRANCISCO and MAPELE Stations, both at the North of Salvador; and SENHOR DO BOMFIM and IACU, these two located in the North and Central zones of the State respectively.

These stations are the starting point for the various lines that connect the network of Bahia with the rest of the Country. Especially, SAO FRANCISCO Station, located 122 Km North of Salvador, is the origin of a branch that links with the Northeast area of the State and extends until Sergipe and some other States at the North.

On the other hand, SENHOR DO BOMFIM and IACU Stations serve for the connection with Juazeiro-Petrolina and the State of Pernambuco, on side, and those of Brumado and Minas Gerais by the other, The latter connection being used to link Bahia with Rio de Janeiro and the most industrialized areas of the South of the Country.

Finally, the fourth corner, located at MAPELE, 22 Km from Salvador, permits the connection of the network with the Capital of the State.

There is also an additional line, presently going through a reconversion and restructuration phase, without any connections with the main network, which runs towards the South of the State, closer to the coast, connecting Jequié with Nazaré and the Reconcavo area. (dwg. 1.4.3.).

The network so described, hardly meets the necessities of transportation of the interior of the State because it does not reached the most populated points of this inland zone. Specifically the Southern zone of Ilhéus, Itabuna, Itapetinga and Vitoria da Conquista has no railway lines, and even the important communications center of Feira de Santana was being served by one branch only from CONCEICAO DE FEIRA. This branch is now closed.

To these deficiencies of general planning it is necessary to add some others of infrastructural nature caused by an excessive accomodation of the tracks run to ground conditions and by poor quality of them. In respect of this last point, and according to the Railways Management, only 40% of these lines could be considered in good state of preservation in 1969.

Referring to the passengers transport, at average speeds of about 25 Km/hr, it is necessary to note the difference between the services at the interior, in clear recession in spite of a certain recovery in 1969 (table 1.4.1.) and suburban services, which have kept more or less firm.

Transportation of merchandises shows on the other hand a satisfactory improvement, originated more by the increase of average run per ton than by any increase of the number of tons transported (table 1.4.2). It is a consequence of low prices per ton/kilometer (about 20.8), which insure the competition of the railway with the road transportation system. At present the main merchandises transported by these means are: minerals, construction materials, oily seeds fibers, beers, maize and mandioca flour.

Finally it can be estimated in general terms, that the railways serving the State of Bahia offer little possibilities of rendering a satisfactory service to any industry which may be established in the interior of the State. Some of the projected improvements, such as the connecting branch of the crossing of the Paraguassu river or the adequacy of port terminals, should help to solve some of the largest problems at present of the Bahian railway system. Likewise, it could be very interesting to extend certain branches up to the very mining exploitations in order to eliminate costly transshipments.

However, the real problems will not be solved with this sort of arrangements, for it is a deeper problem that affects not only to the State of Bahia, but to the entire Brazil. This Country has a very wide secondary railway network (most of it metric gage), designed from local point of view which is fully overcome at present, but lacking a nationwide railway network.

#### 1.4.5. SEA AND RIVER PORTS

The ports situation in the State has borne and is still bearing the consequences of a distroted situation originated by non-existence of adequate land connections, mainly railways to allow for rapid and low cost connection between the ports and its area of influence.

This situation prevents that in many cases sea transportation may compete with road transportation. The result of this is a reduction in cabotage operations and a rate increase as a compensation, which again is another limitation to the possibilities of sea carriage.

Also the administrative red tape, the slowness of portuary operations and loading and unloading costs originate additional charges of dead capital. Consequently, highway transportation of a certain importance is taking place today at distances of 1,000/1,200 Km.

The Government who is aware of the problem is carrying out a detailed study of the road-railway system in Bahia, through the "Grupo Exccutivo de Integração da Politica de Transportes, GEIPOT", in order to define the indispensable connections between the ports of the State and its "hinterland".

The two most important ports in Bahia are those of Salvador and Ilhéus, both of an official nature. The operation of the Port of Salvador has been granted to a private concern, "Companhia Docas da Bahia". The consession has recently been cancelled by the Federal Government in view of the poor operation of the port service, whereas the Ilhéus port is operated by the D.N.P.V.N.

The Alves Camara private sea terminal is located in Madre de Deus, within the Reconcavo area, for tankers loading and unloading, in Todos os Santos Bay with other minor port, the Sao Roque Port, especially designed for mineral handling. Land connections for this port are being studied in order to provide an adequate service to promote its development.

In the rest of the State, there are several ports of little importance: Valença, Taperoá, Ituberá, Canavieiras, Porto Seguro, Nilo Peçanha, Balmonte, Camamu, Caravelas and Capinho. The latter, in the surroundings of Marau, has, in Pigminas, a private terminal for transportation of baritine.

Projects under way are directed to a development of new outgoing ways for the goods from the Reconcavo region, relying upon Aratu terminal and the conditioning of the Salvador Port, as well as to facilitate transportation of basic export goods, cocoa now and rubber in a near future, with the construction of new ports in Ilhéus (Pontal do Malhado) and Campinho, in Marau Bay. Likewise, construction of some private terminals has been authorized in order to facilitate the transport of some specific products:

- Usiba, in Ponta da Sapoca, in the Todos os Santos Bay, with 250,000 TPA capacity of iron ore.
- Magnesita S.A., in Ponta de Periquito, on the Paraguassu river, in Sao Roque, for transportation of magnesite.

This company is having problems with transportation of the mineral located in Brumado, because the railways connection does not reach the sea terminal station, and therefore, transshipment to trucks must be made.

\* Hevea da Bahia, in Gravata, near Campinho, for timber transportation.

The main ports in operation or under project present the following characteristics:

Salvador Port

This port of general cargo is very limited in its development by the evolvment of the so called "low city" of Salvador, which considerably reduces its possibilities of expansion due to lack of adequate places for installation of new warehouses and cargo handling yards. Also, topographic characteristics of the city make difficult the accesses to the port, mainly in regards to railway connection.

In spite of this, reconditioning and expansion works have been carried out, which consist of:

- . Over 260 m extension of North dike. Its purpose to provide shelter and marine stability to the area of the coal and mineral piers of a large part of the Sao Joaquin bay and permit utilization by small boats coming from the Reconcavo shipping its agricultural and handicrafted goods.
- . Erection of auxiliary equipment, cranes and electric supply networks.
- . Works in the Sao Joaquin bay for the ferry-boat terminal Salvador-Itaparica-Nazaré which will greatly solve the transportation problem of the Reconcavo area, shortening distances between said zone and Salvador.

.Presently, it has 1,500 m mooring capacity with depth variations between 4 and 10 m and adequate installations to handle 1,500,000 TPA. In spite of this, the handling at present is kept down to 600,000 TPA due to above reasons (table 1.4.3.).

#### Ilhéus Port

The continuous obstruction of the access channel to the Ilhéus Port and scarce depth have limited cargo operations (table 1.4.4.), mainly of the various products for which the only natural outgoing way is said port. It has even been necessary to use small boats for cocoa transportation - 87% of exports in 1969 through the Ilhéus Port - to larger ships moored in the Bay since it was impossible to approach to loading piers.

For this reason a new port is under construction in Pontal do Malhado, which will receive ships up to 10 m gage depth. Said Port, which will become operational shortly, has 420 m of available dikes and will be completed in 1971. It will be used mainly for shipment of cocoa, piaçava, timber, cattle and rubber. This last product is expected to be second among the exports of the area. It will also receive important quantities of fertilizers required by its zone of influence.

#### Campinho Port, in the Marau Bay

This Port presents the characteristics of a special terminal and is expected to become operational by the middle of 1971, although it is necessary to complete highway connections through BR-030 highway with BR-116 and BR-101 highways.

It is expected that this Port with 10 m gage depth will allow the handling of all the economic potential of the zone, which is rich in baritine, manganese and gipsite and even could handle cocoa from the most



northern part of the cocoa area, as well as the production of the "Valle de Sao Francisco", whose left side offers great future possibilities.

#### Aratu Terminal

The construction of a port was foreseen firstly; now it seems that authorization will be granted for construction of a especial terminal operating under the form of a point tenancy of the various companies established in Aratu.

Located in the Todos os Santos Bay, it offers the best conditions of all the bays because it has a 17 m deep access channel.

Its construction will take place in four stages starting with 1,000,000 TPA load forecast in 1973, until reaching 12,000,000 TPA.

Basically it will consist of construction of a terminal for liquid bulk handling in Ponta de Marinho and other in Ponta de Joao Pereira for solid bulk handling, connected to the storage yard by belt conveyors.

This last terminal, 220x35 m which can be expanded up to 300x50 m. will receive during the first phase ships up to 35,000 D.W.T. with 12 m gage depth, and ships up to 90,000/100,000 D.W.T. with 17 m gage depth during the last phase.

In respect of the liquid cargo terminal, with a 25 x 15 m reinforced concrete platform connected to land by an access bridge which will support all the necessary piping, will be capable of exceeding 3,000,000 TPA with loading and unloading equipment at the rate of 1,000 Tn/hr.

The connection will be provided by means of an 8 Kms railway branch with Pasto de Fora and with a 5,5 Km highway connecting with BR-324 highway. This road already paved will be connected to the storage yard, which will have an initial capacity of 72,000 Tn of solid bulk, to be completed through various phases up to a total of 1,296,000 Tn.

#### RIVER PORTS

In regards to rivers ports, two are under construction in the Sao Francisco river, facing each other in the cities of Petrolina y Juazeiro respectively. Its main purpose is to handle 200,000 PTA of gipsite. However, it looks indispensable also that adequate facilities be built in Pirapora, in the state of Minas Gerais, to permit an integration highway-river with a view to transportation of above product.

Dredging and buoying works are being carried out in the Sao Francisco river in the section between Juazeiro and Pirapora, which are 1,200 Km apart.

1.4.6. TELECOMMUNICATIONS

The serious telephone problem, and of communications in general, existing in the main metropolitan centers of the Country seems to have reached a positive solution, technical-economic as well as autofinancing and with realistic tariffs, from 1965 with the establishment of EMBRATEL, a public concern linked to the Telecommunications Department.

The strong rate of development in this infrastructural sector, which has considerably increased during the last two years, foresees for 1971 the establishment of the communications system in Amazonia, in tropodifusion, besides the development of other three basic systems:

- . Microwaves main lines of high capacity and quality (960 to 1800 telephone channels) in accordance with international standards, which will connect all the cities of Brazil running across the cities with a higher density of population. This system will be installed by EMBRATEL.
- . Complementary system, under responsibility of the State, to connect by means of high capacity and quality lines the major cities of each State with access points to basic national system in important cities, thus making an integrated communications system.
- . Auxiliary system under Federal responsibility to insure connections requiring a smaller capacity by microwaves systems.

Specifically, the system includes main lines shown on drawing 1.4.4.

As for Bahia, the execution of a project by the State in accordance to which TELEFONOS BAHIA S.A. will install a microwaves network and automatic switchboards in more than 100 cities of the State will be implemented, which will allow connection among themselves and with Salvador.

At present the telephone system in Bahia includes 28,000 telephone sets approximately, installed in 62 cities, of which 19,000 are in the first administrative zone, Salvador included, where installation of other 19,000 additional sets are expected to be in service in 1971. Said area that covers 10,500 Km<sup>2</sup> (2% of the State) and 1,250,000 inhabitants (21% of the State) has 68% of the total number of installed telephones, with an index of 15 telephones per 1,000 inhabitants.

As for the interurban system, mainly consisting of overhead lines in voice frequency and a low capacity UHF network, includes the Salvador-Ilhéus tropo-diffusion system the first of this type to be installed in Brazil for public service.

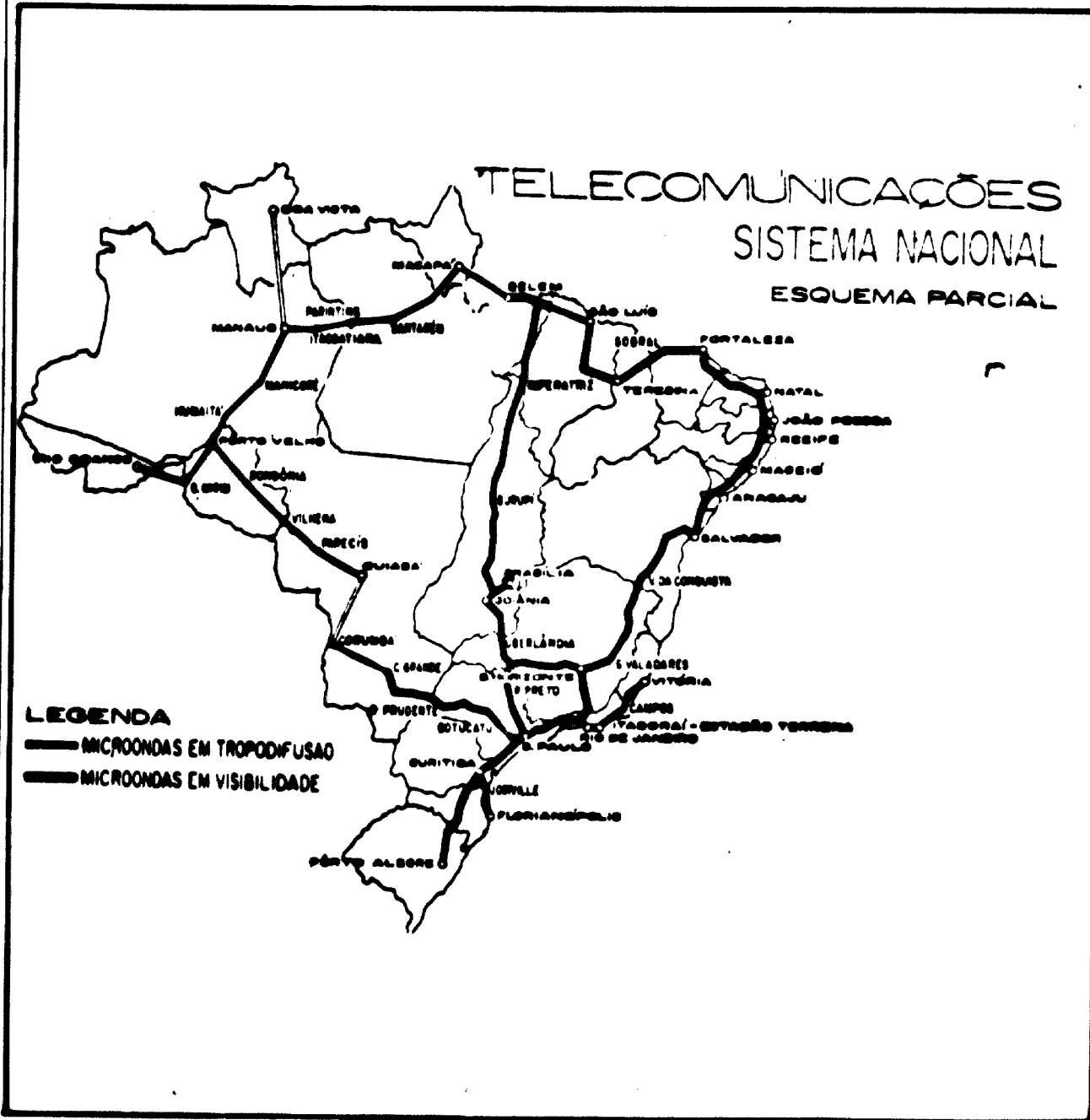
Said interurban network (drawing 1.4.5.) permits to connect Salvador only with 27 switchboards out of the 61 operating at present.

The remainder of the State fundamentally depends on DCT telegraphic system (drawing 1.4.6.) which consists of single overhead lines with ground return, having phonographic services in 154 cities and manual Morse telegraph in another 129 cities.

There are also some private network of private or official agencies such as for instance, a HF radio service operating in C.W. manual Morse telegraph system and telephony, which connects Salvador with 92 units and that belongs to the Secretary of Public Security.

Summarizing it can be considered that the infrastructural telecommunications system of the State of Bahia presents the following characteristics:

- \* The telephone system in Salvador is deficient and also seems to be overloaded in certain areas. It is also evident that its quality does not meet international standards.
- \* The interurban service of the State is very deficient due to insufficient major connections and to transmission conditions, noisy in general. Systems are operated manually, except for Ilhéus-Itabuna connections with DDD system.
- \* Present system is far from fulfilling minimum necessities of the State because it covers less than the third part of the potential market. There is a large number of cities without rapid and efficient communication among themselves and with Salvador. However, projects under way (drawing 1.4.7.) intend to establish telephone switchboards in all the cities of the State in accordance with a priority schedule, as well as an efficient interurban network which provides good quality communications.
- \* The zone defined by the "Centers of development" of Ilhéus, Itabuna, Vitoria da Conquista, Jequiá, Feira de Santana and Alagoinhas, is, as it happens with the other infrastructural sectors, the one that has the largest possibilities of communication. In addition the plans for above installations allow to assume that during the next two years, the available connections will be at least sufficient, so that, regardless of possible localized points, serious problems will not exist which may impose an important limitation to the development of above mentioned zone.



PLANO 1-4-4

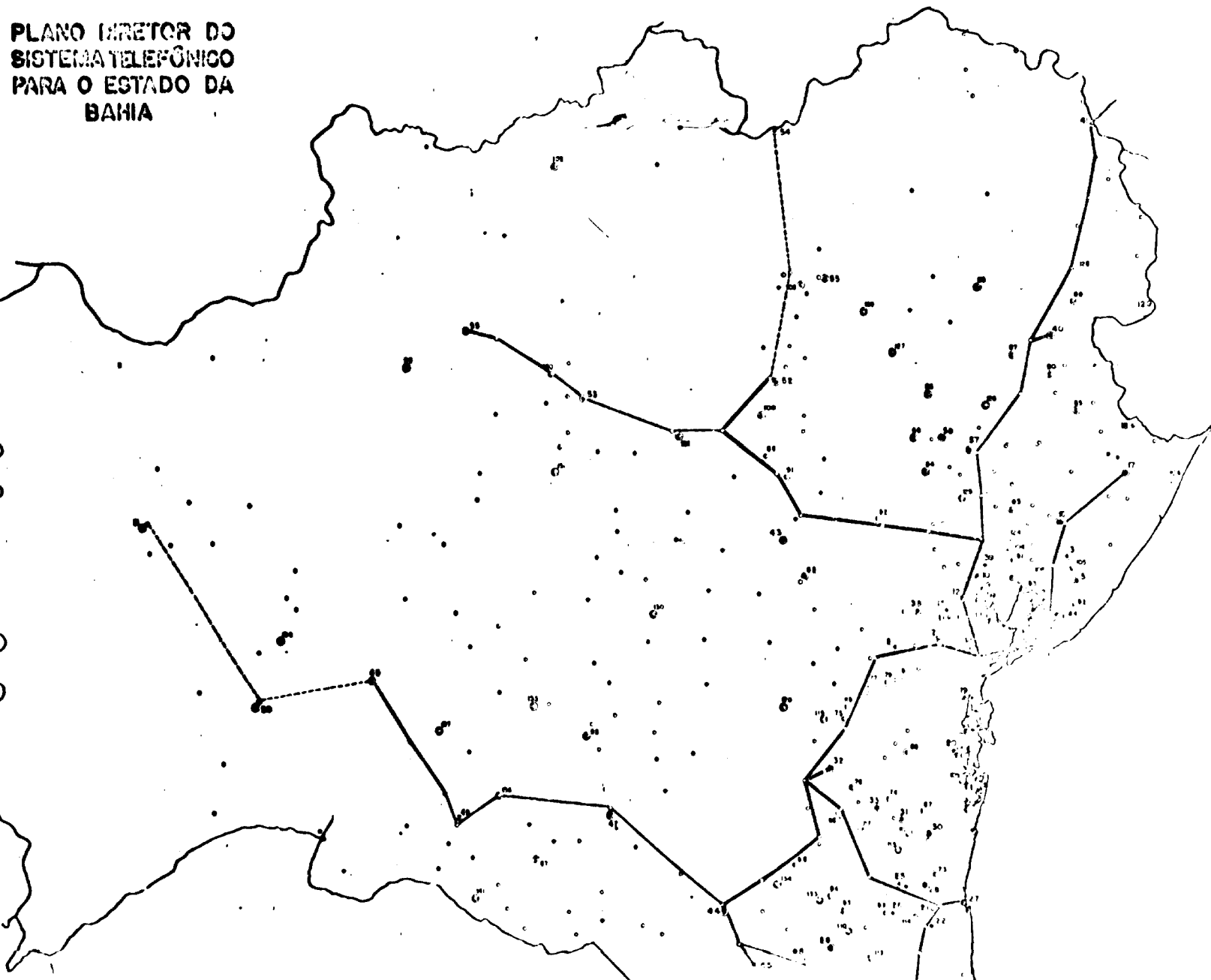
ESTADO DE BAHIA







# PLANO DIRETOR DO SISTEMA TELEFÔNICO PARA O ESTADO DA BAHIA



	2ª ETAPA E	3ª ETAPA E	4ª ETAPA E
SALVADOR	EMILIA RODRIGUES	04 CONFÉZIO DE JACUIPE	AS 104 CORDES RESTANTES
ATAÍDES	1000 SO. DO CONDE	05 PAVÃO	DO ESTADO DA BAHIA
BELO PRATA	1001 S. FILHO	06 BARRA DO PASSE	
BREJEIRO	1002 S. JACINTO	07 S. FELIPE	
CACULAI	1003 S. JOAQUIM	08 S. GERALDO	
CANTARELLAS	1004 S. JOSE	09 S. JOSE DO CARIACI	
CAVALARIA	1005 S. JORGE	10 CATARANGA	
CEARÁ	1006 S. MATEUS	11 F. ALVES	
CHOCÓ	1007 S. MATEUS DO SUL	12 GOMÊS	
CRUZES	1008 S. MATEUS DO VALE	13 GOMÊS	
ESPIRITO SANTO	1009 S. MATEUS DO VALE DO SUL	14 ITABUNA	
EUCLÁZIO	1010 S. MATEUS DO VALE DO SUDOESTE	15 ITABUNA	
EUFRÁSIO	1011 S. MATEUS DO VALE DO NOROESTE	16 ITABUNA	
FERRAZ	1012 S. MATEUS DO VALE DO NOROESTE DO SUL	17 ITABUNA	
FRANCISCO BASTOS	1013 S. MATEUS DO VALE DO NOROESTE DO NORTE	18 ITABUNA	
FRANCISCO ESTRELA	1014 S. MATEUS DO VALE DO NOROESTE DO NOROESTE	19 ITABUNA	
FRANCISCO FERRAZ	1015 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE	20 ITABUNA	
GABOIA	1016 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO SUL	21 ITABUNA	
GRACIALETA	1017 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NORTE	22 ITABUNA	
GRACIALETA	1018 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE	23 ITABUNA	
GRACIALETA	1019 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUL	24 ITABUNA	
GRACIALETA	1020 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO NORTE	25 ITABUNA	
GRACIALETA	1021 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE	26 ITABUNA	
GRACIALETA	1022 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NORTE	27 ITABUNA	
GRACIALETA	1023 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE	28 ITABUNA	
GRACIALETA	1024 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUL	29 ITABUNA	
GRACIALETA	1025 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NORTE	30 ITABUNA	
GRACIALETA	1026 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUL	31 ITABUNA	
GRACIALETA	1027 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NORTE	32 ITABUNA	
GRACIALETA	1028 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUL	33 ITABUNA	
GRACIALETA	1029 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NORTE	34 ITABUNA	
GRACIALETA	1030 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUL	35 ITABUNA	
GRACIALETA	1031 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NORTE	36 ITABUNA	
GRACIALETA	1032 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUL	37 ITABUNA	
GRACIALETA	1033 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NORTE	38 ITABUNA	
GRACIALETA	1034 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUL	39 ITABUNA	
GRACIALETA	1035 S. MATEUS DO VALE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NOROESTE DO SUDOESTE DO NORTE	40 ITABUNA	

**SISTEMA BÁSICO INTERURBANO**

- SISTEMA MUÇOMANGÁS DIVERSOS TIPOS (FREQUÊNCIA VISIBILIDADE DIRETA COM CAPACIDADE DE 1000 CORDES BAO CANAIS TOTALMENTE TRONCADO)
- SISTEMA MICHOMANGÁS VISIBILIDADE DIRETA (FREQUÊNCIA VISIBILIDADE DIRETA COM CAPACIDADE DE 1000 CORDES BAO CANAIS TOTALMENTE TRONCADO)

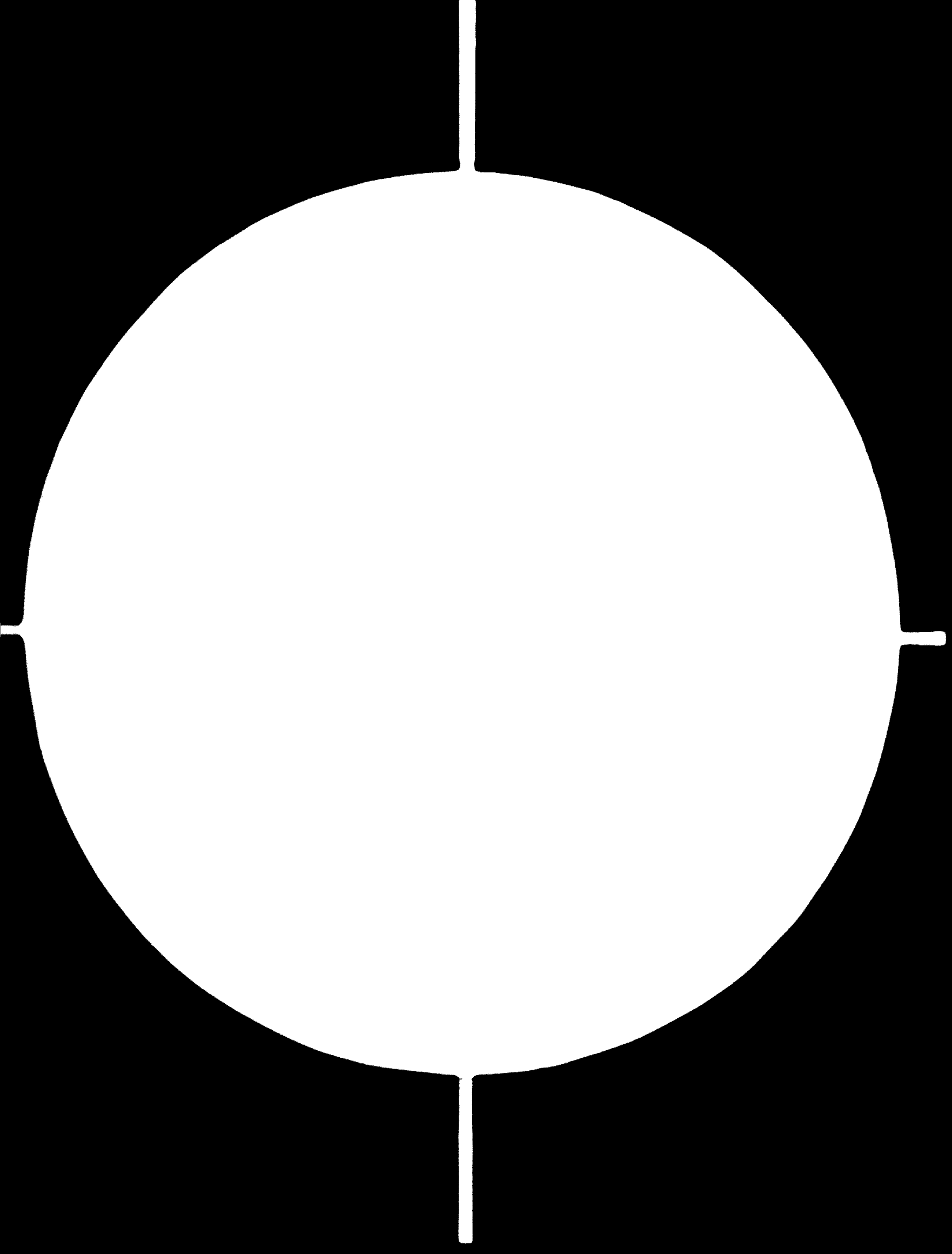
Nota: AS LEGENDAS DO SISTEMA BÁSICO INTERURBANO SÃO APENAS PARA O FIM DE EXEMPLOS E NÃO DEVEM SER TOMADAS COMO REGRAS PARA O PROJETO DE CADA LIGAÇÃO.

Nota: PARA CENTROS TRONCADOS INTERURBANO, VERIFIQUE AS FIGURAS.

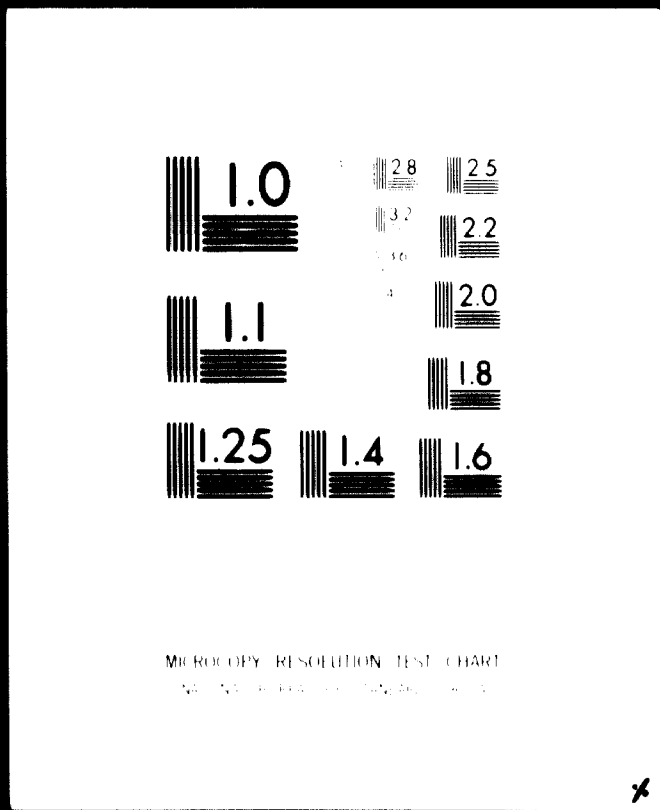
**G - 560**



**81.08.24**



2 OF 7  
02510



24 x  
D

Nevertheless, and in spite of the fact that the action taken insures a minimum of service in the most interesting zone of the State, it will be necessary to intensify the extension and improvement of the communications network as a way to facilitate the industrialization of inland Bahia.

#### 1.4.7. WATER SUPPLY AND SEWERAGE SYSTEMS

The problem of water supply and installation of sewerage systems was characterized, not until long ago, by the absence of nationwide programming policy.

However, and referring specifically to the North-East of the Country, Sudene has made a great effort during the last years preparing a water supply regional program which would coordinate to all Federal, State and Municipal organizations. At the same time Sudene has sponsored the establishment of mixed economy societies in order to perform the administration of services already established and insure an adequate operation, with a view to a realistic definition of tariffs paid by the users in substitution of the "politic prices" system

This co-ordination permitted to avoid the dispersion of economic resources of the various organizations and approach the problem with an overall view of priorities which resulted in a large increase of referred services.

In spite of all this, there is a great shortage of water supply in all the North East of the Country and even in Brazil in general, which is characteristic not only by insufficient installations but also by deficiencies in the network and poor operation of the new installed systems. Besides this, it is to be born in mind the low level of economic development of a part of the population of the communities served, namely, the low financial capacity of said population to request their connection to existing service network. In respect of this problem, it has been recently established that hardly 40% (average) of the population of cities with water supply system really participate of this service.

Basically, investments made were given priority to water supply systems to the capitals of the States and municipalities of the inland, and secondary towards minor consumption centers, such as districts and villages. Also, as it is natural, water supply systems were given absolute priority over sewerage systems, although presently attempts are made to establish a balance between those two services.

Specifically, for the state of Bahia, the water supply system, which falls under the responsibility of SESED for the inland and SAER for the Reconcavo area, is in general very deficient in all the zone out of the area defined by the centers of development of Ilhéus, Itabuna, Vitoria da Conquista, Jequié, Feira de Santana and Alagoinhas (drawing 1.4.8.).

Only 126 out of the 335 municipalities of the State have water supply at present (53 of them untreated water), while only 68 out of the 209 remaining have technical projects designed with a view to future supply.

In the supplied zone, said 126 municipalities, and according to estimated figures, 824,000 people receive treated water and another 110,000 receive untreated water, a part of them using individual filters.

The number of properties with possibility of supply is estimated at 430,000, although at present, probably, due to short familiar financial availability only 139,000 properties (namely 32%) receives the supply. However, individual connections amount to 187,000, what means that the average is four connections per three property with supply.

In accordance with above figures, the average number of people per property is 6.7 which applied to the 131,000 properties that could be supplied which are not at present, gives a figure of 1,250,000 additional people who could be supplied as planned.

Nevertheless, as it is obvious, in the case that this number would desire to connect with the system all at the same time, the 150 l of water per inhabitant/day minimum considered for every project accomplished, could not be reached immediately because the various phases of execution of the projects under way are being completed gradually in accordance with the necessities of consumption, as the number of connection to the network increases.

It is estimated that systems installed in the State still pending execution of some phases are capable to supply an approximate water volume of 7,600,000 m<sup>3</sup>/month, of which 1,250,000 m<sup>3</sup>/month are untreated water.

Of these figures, almost 4,000,000 m<sup>3</sup>/month of treated water are for Salvador, where it is estimated that 550,000 people are supplied in spite of the fact that, due to several reasons, only 65,000 properties out of the existing 150,000 are supplied with water. However, the number of individual connections amounts to 110,000. This figure as it is natural gives an average between the number of properties supplied and the number of connections much higher than that for the overall State.

In respect of type of water being obtained, 110 municipalities have surface waters and 16 use underground collections. Out of those 16 only two have treated water: Serrinha y Alagoinhas.

As for the 209 municipalities which are not supplied yet, with a number of 128,000 property, 86% of surface collections are planned and it is estimated that the completion of these projects will allow, in due time, the supply of another 650,000 people.



The tariff system established by the Government of the State depends on various factors, and it varies accordingly with the geographical location of the area to be supplied, its size (probably by reason of lack of meters of said properties), and with characteristics of the service to be rendered namely, familiar, commercial or industrial. Each one of these services has fixed tariffs up to a level of maximum consumption of 12 m<sup>3</sup>/month, 24 m<sup>3</sup>/month and 36 m<sup>3</sup>/month respectively and additional costs per m<sup>3</sup> of water used in excess of approximately 0.50 N.C. for the SESEB system and 0.40 N.C. for the SAER system (tables 1.4.5 and 1.4.6.).

However, there are especial cases where tariffs are decided in accordance with other criteria. Especially in the Aratu industrial center under the responsibility of SAER, with abundant availability of water and important supply projects underway, the prices are approximately 0.05 U.S.\$/m<sup>3</sup> (0.24 N.C.) for all consumption levels, also having cooling water almost free.

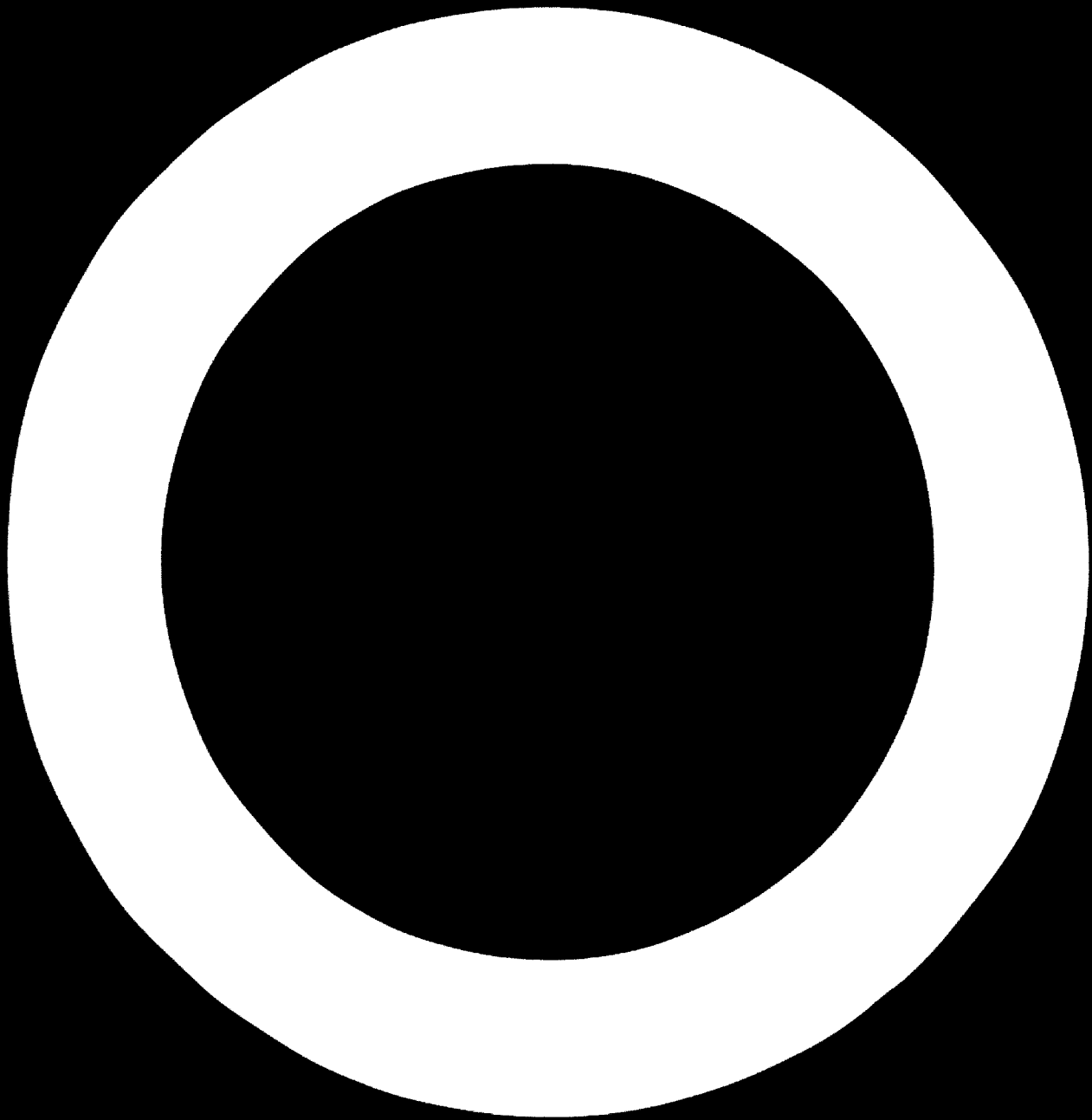
Summarizing, it can be estimated that the State of Bahia in respect of water supply and availability of sewerage systems presents the following characteristics:

- \* Deficient supply system (in spite of progress made) mainly outside the area defined by the centers of development.
- \* Greater availabilities of surface water in the most populated zones of the State. This is proved by the fact that mean distances between the source of supply and the cities supplied in such areas is 5 Kms.

- Greatly scattered population in the inland with low income level. This prevents the execution of large installations which implies cost increase, due to non-existence of highly populated municipalities and to limited financial capability to connect to the supply network.
  
- Scarce sewerage systems, in spite of the fact that today great attention is being given to this problem. In 1969 only 8 systems were in operation, expansion or construction in the State of Bahia.

It can be deduced from above general lines that it will be necessary to determine possible points where the development of a sector geographically located require the execution of new water supply projects or expansion of the existing ones, after completion of detailed studies of industrial sectors whose definition is the purpose of this study.

**1.8 NATURAL RESOURCES**



### 1.5.1 AGRICULTURAL RESOURCES

#### General Considerations

In the State of Bahia, with a total surface of 56 million hectares, the number of agropecuary exploitations registered in the 1960 Census was of 381,473 with a surface of 17,7 million hectares from which 3,3 million were cultivated; 6,2 million hectares were natural and cultivated pastures; 4,6 million corresponded to natural and reforested plants and 3,4 million to uncultivated and waste land.

Due to its great extension the State of Bahia offers various climates and soils which permit the cultivation of a great variety of crops.

The most important crops produced in the cultivated Bahian land are, in order of importance:

- a) Among the permanent industrial cultivations cocoa is the most important, covering an area of 443,000 Ha with a production of 186,000 Tm valued at 136 million N Cr.; Sisal is second in importance with 122,000 Ha of cultivated surface with a production of 93,000 Tm, valued at 16 million N Cr.
  
- b) Among the permanent fruit crops and other tropical plant crops the Banana is the most important, with 12,000 Ha, 19,000 Tm and 16 million N Cr. The Orange with only 4,300 Ha produced 317,000 Tm, approximately 9 million N Cr.; and the coconut with 29,000 Ha of cultivated land and a production of 171,000 Tm, valued at over 22 million N Cr.

- c) Among cereals Corn is the most important, with a cultivated area of 270,000 Ha with a production of 260,000 Tm, valued at 28 million N Cr. Brown rice covered 32,000 Ha and produced 72,000 Tm valued at 19 million N Cr.
- d) Of basic importance as staple food are Beans (229,000 Ha, 175,000 Tm, 59 million N Cr. production value) and manioc (198,000 Ha, 3,375,000 Tm, at 75 million N Cr.).
- e) Among the temporary (seasonal) industrial crops Sugar Cane, Tobacco and Spurge are of major importance. The first, together with manioc, absorbs the greater production volume (3,383,000 Tm); while of tobacco only 28,000 Tm are produced; the production of spurge being 140,000 Tm. The value of the production was 38,7 million N Cr. for sugar cane, 16,2 for tobacco and 31,9 for spurge.

The previous data is reference only for 1967. In Tables 1.5.1 to 3 of the Appendix it also covers the years 1965 and 1966.

#### Bahian Main Specific Problems of Agricultural Production

Merely by counting crops and productions Bahia can be identified as a typical example of tropical agriculture; there is a total lack of wheat as the base for human nutrition, it is partly substituted by manioc and rice followed by typical tropical export crops as are the: Cocoa, Sisal, Sugar cane and Tobacco. Many of these cultivations suffer important structural problems today.

The Ilhéus-Itabuna zone absorbs the production of cocoa almost totally for Brasil and is one the world's great production centers; although during the last few years the African production (Ghana, Nigeria, Ivory Coast) has increased, thus reducing Brasil's participation in world production by 17,6% from 1952 - 56, to 13,3% in the period 1964 - 68.

Several events have conditioned this relative decrease in Bahian production. First of all the cultivated area does not admit any increment. Secondly, plant age has excessively overpassed the ideal 8 to 13 years additionally, plants are placed within 4m frames, whereas in Africa they use 3 m. frames and are planning the use of 2m. ones. Finally, there are some deficiencies in exploitation technology (pests, soil selection, etc.).

In spite of all the above mentioned, economical profits regarding profit margins continue being satisfactory for Bahian cocoa; although the same cannot be said for capital profits, since the soil is unrealistically overvalued.

Relative to Sisal, as happens with other leaf fibers, the problem lies in searching for new applications to replace the traditional ones that no longer have favourable market perspectives.

Brazil plays a very active role in the labour performed by the Leaf Fibers Advisory Committee of the FAO, and has established an executive group for rationalizing the sisal cultivation, located in Bahia. Brasil also foresees the establishment of an international center for the investigation of hard fibers.

As to fruits and other specific tropical products, there are various difficulties that endanger crop continuity, limited in some cases to simple picking. The cause of this situation is a lack of compensation between production and consumption, especially attributable to lack of adequately organized industrial transformation.

Finally, it is of interest to mention Bahian tobacco, which constitutes one of the principal exports of the State, whether in leaf or in already elaborated cigars; being Germany and the U.S.A. the most important importers of the latter, while Spain absorbs 35% to 38% of leaf tobacco exports.



### 1.3.2. VEGETABLE EXTRACTION

No real cultivation exists for a certain number of crops, they are simply extracted or picked by temporary workers according to market demands.

Among such crops the Piaçava, Dende, Licuri, Caranday Palm and Borracha or natural rubber, are worthy of mention.

#### Piaçava

It is found along the coast, especially in the South, and in the municipalities of Cairú, Ituberá, Valença and Nilo Peçanha.

Its products, included among the group hard fibers are of an excellent quality and have not suffered any specified substitution by any synthetic item.

Its exploitation and further industrialisation is made difficult because of transport costs, increased by the dispersion of the plant and abundant rainfall during collection season.

In 1964 the production amounted to 19,000 Tm, from which 2,150 Tm were exported.

#### Licuri

It is a medium sized tree well adapted to dry regions, such as "Las Castiņas". It can be found through the greater part of the Bahian territory.

The tree's profitability index is acceptable; among its products are oil, wax and cake, cake is obtained after oil extraction and used for feeding cattle.

In 1967 the Licuri production amounted to 9,500 Tm from which only a small percentage was exported.

### Caranday Palm - Wax

This plant's ecological zone extends along the Sao Francisco river. Bahia occupies fifth place among producer States, having obtained 335 tons of product in 1967.

### Dendé

Among vegetable products of simple extraction Dendé has a very great importance, if only for its very great demand in the typical Bahian kitchen.

Dendé can be found along the Southern coast, especially in the municipalities of Valença, Cairú, Tapera, Nilo Pezantra, Ituberá and Camamú.

In 1960 the production was 30,000 Tm, production surface on which the collection was made was of 15,000 Ha, there being another 15,000 Ha on which no collection was effected. There is an excellent oil yield per hectare, approximately 2000/3000 Kg per Ha, against 1000/2000 from coconut, 800/1000 from amendoim and 200/400 from soy bean. This may be the reason why a Bahian company is considering the organization of a rationalised Dendé plantation.

Among its applications, aside from culinary, dendé oil is used for elaborating margarine, soaps, and for thermic treatments in siderurgy. It also has applications in the pharmaceutical industry.

### Borracha or Natural Rubber

In 1967 the State of Bahia had a production of natural rubber of 3,413 T. equivalent to 11,50% of the total production of Brazil which was 29,787 tons.

Bahia appears as one of the five big producers of natural rubber in Brazil, being the other four States Rondonia, Acre, Amazonas and Pará, all of them with superior production than that of Bahia, and that all together make a total of 25,266 tons in 1967, equivalent to 85,5% of the Country's production.

The characteristics of natural rubber are well known, its limitations and advantages, according to the use made of it and in comparison to the synthetic one, to which it can be considered as complementary; this has great importance, since due to natural gas sources in Bahia the possibilities for petrochemical industries are very interesting, and, in consequence, for synthetic rubber.

The perspectives for natural rubber are most favourable (in many cases it already presents cultivation conditions) due mainly to the following circumstances:

- Favourable ecological conditions of the zone.
- Increasing consumption of rubber in Brazil due to increase of motor park and motor vehicle transport.
- Greater possibilities in Bahia, compared with other areas in Brazil (above all the Amazonia) for rationalising the exploitation.

The principle Municipalities where rubber is produced in the State of Bahia are: Ituberá, Una, Camamó, Canavieiras, Caraci, Itajuípe and Marau; all of them located on the Southern half of the Bahian Coast.

### 1.5.3. FORESTRY RESOURCES

The study of forestry resources in Brazil as a whole, and in Bahia in particular, becomes really difficult due to the lack of basic quantitative data relative to forestry surfaces and valuation of the reserves. The only available figures are those of tree felling and charcoal production.

According to those figures, the State of Bahia, with a felling of 17,9 million m<sup>3</sup> in 1967 is in the first place among the States of the North East and the second in the Federation, after Gerais Mines. In total the felling in Bahia represented approximately 13,2% of the 135,7 million m<sup>3</sup> in the whole country.

Charcoal production in Bahia is not so remarkable. In 1967 it was of 54,764 tons, or equivalent to 5,7% of Brazilian production, from which alone the State of Gerais Mines assures an approximate 60%. Other two States, Pernambuco and Sao Paulo have a superior production to that of Bahia, but of a range or level very much alike (58,800 and 85,000 tons in 1967, respectively, in rounded figures).

From all the above it can be deduced that forestry resources in Bahia, reference made only to the volume, though impossible of including in the big reserves of the Country - role that obviously corresponds to the Amazon jungle - has in any case, a remarkable importance.

Now, qualitatively, Bahian hard noble wood resources are truly remarkable, especially jacaranda, a species of which there are extensive forests with trees of unsurpassable quality in the Southern part of the State.

However, and this applies not only to Bahia but to the whole of Brazil, the truly important problems that affect forestry resources are not those of actual availability, but their exploitation conditions. The rythm of felling is excessive, and re-forestation (required by the Law to be the same as that of felling) is insufficient, especially in the case of fine woods - such as the jacaranda - whose growth and formation require a very long time. It is said there is a serious danger of dissapearance (20 to 30 years) of all these innensly valuable resources of tropical fine woods.

There is an additional inconvenient, which is the defective procedures used when felling, seriously damaging the forests being exploited.

All of these circumstances lead to believe that in the not too distant future Brazil culd have serious supply problems. Therefore, a more intense action of overseeing and tutelage of such valuable resources is advisable.

#### 1.5.4. LIVESTOCK RESOURCES

##### Generalities

Brazil is fourth or fifth in the world in livestock, and Bahia occupies an acceptable level within Brazil with 9.2% of the country's cattle; 8.6% of pigs; 12.4% of sheep; and 23.2% of the Brazilian stock of goats. In concrete numbers, in 1.968 there were 8,433,000 head of cattle; 5,630,000 of pigs; 2,979,000 of sheep; and 3,436,000 of goats. The statistical details of the livestock in Bahia can be found in the Appendix, in table 1.5.6.

The climatic conditions, with their great influence on environmental characteristics as well as the tipe of vegetation and pasture land, are the basic determinant of the livestock of Bahia. For example, we find, specifically in the case of cattle, that only one particular species, the Indo-brazilian, seems to have fully and generically adapted itself to the conditions of the area.

The relatively high proportion of poor livestock (sheep and goats) within the total is also a result of the climatic characteristics of the area, primarily the interior with its infrequent and irregular rainfall.

The result of all the above mentioned circumstances is livestock characterized by:

- Low yields in meat per hectare, which is forcibly reflected in an extensive nature throughout the exploitation.
- Consequently, a somewhat wild life which, as a result, gives place to the yield of meat with a great deal of flavor but very tough.
- A low milk production as a result of the afore mentioned conditions of livestock exploitation along with the specific

characteristics of the cattle (298,000,000 litres in 1967 for the entire State).

At first glance, the above considerations could give place to a markedly pessimistic impression with respect to the possibilities of Brazilian livestock, an obvious error, as said livestock is one of the most interesting resources of the State, with a very great potential.

Possibilities for improvement

In effect, it is necessary to have in mind in this respect that the results presently observable in Bahian cattle are purely those of a simple, natural adaptation of the livestock to the environment, since the improvement programme advocated and favored by the State, which will surely give optimum results when it reaches an extensive nature, has not yet been undertaken in a large scale manner.

Concretely, the following aspects offer great opportunities for improvement:

- a) Improvement of pastures. In certain regions of the State, those with greater rainfall such as the Reconcavo, Conquista, and Itapetinga areas, there are fair natural pasture lands which, with improvement, could provide the basis for cattle with a greater yield.
- b) Greater supplies of forage. The new irrigation systems may constitute a item of maximum interest for the production of forage, with a view to adequate regulation of cattle feeding and to facilitation of diets specifically adapted for an increment in milk production.
- c) Genetic improvement. In this field, there are wide possibilities for improvement of the species through investigation and selection, using modern techniques of insemination, yield control, veterinary supervision, etc. The work accomplished up to the present in the state of Bahia, although of vital interest, has not its fullest possible extent.



d) Improvement of exploitation. The above mentioned activities may serve as an impulse for rationalizing exploitation without arriving at the use of intensive livestock procedures it is, however, possible and financially feasible to initiate and generalize a minimum control of the livestock in the country, to improve the sanitary conditions of the same through adequate veterinary care, to adequately perfect the diet for feeding; obtaining by all these means greater yields in production.

All this activity for improvement of livestock will demand a coordinated policy not only in the fomentation and facilitation of technical improvements but also in commercialization and price maintenance. In this latter sense, industrialization of meat could be an element of major importance.

Other species

In the preceding commentary, no mention has been made of horses, asses and mules, used mainly as agricultural animals and beasts of burden. However, directed toward export to countries utilizing these meats for consumption, some production of horses has been begun in the region of Bahia for attainment of meat.

The only possible market for such products is the foreign one, as long as Brazilian consumption habits do not change.

Fowl

The 1968 avicultural census for the State of Bahia counted 15,336,000 fowl. Presently, modern production of fowl for provision of meat and eggs at reduced prices in order to spread this type of food to wider sectors of the Bahian population or to initiate exportation to other states, is not extensive.

1.5.5. MARINE AND FLUVIAL FISHING RESOURCES;  
HUNTING RESOURCES

Fishing

The marine fishing resources for the region of Bahia are those typical of a tropical climate, influenced by the presence of a warm current (the Brazil current); and still more, by the nature of the marine bottom, both along the coastal plain as well as beyond it. Said bottoms are in effect calcareous and irregular, with abundant coral formation as well, all of which gives place to scarce surface fertilization, and still less in deeper waters, thus excluding from these waters anchovies, sardines and herrings which represent 51% of world catches; also, these conditions make these waters unattractive to migrating oceanic species. On the other hand, such waters are favourable for the Tunidae and similar species, and for the Serranidae and Tuteanidae (Garoupas and Porgies). Also there are abundant prawns and lobsters.

Confirming these analyses, the investigations realized by the Japanese vessel TOKO-MARU and collected in the "Survey Report of the Brazilian Fishing Grounds" indicate that the main species of the Bahian marine area are:

Oceanic fishing products: Scombridae family  
(Tunny and Cavalos)  
Istiophonidae family  
(Espadortes)  
Ceryphanidae family  
(Dourado)

Beet fishing products: Serranidae family  
(Garoupas)  
Lutpanidae family  
(Porgies)

Coastal fishing products: Corangidae family  
(Xareous)  
Prawns and Lobsters  
Baleias  
Algae

Another consequence of major importance derived from the rocky and hard and even coraliferous bottoms is the impossibility of trawling, practically limiting the applicable techniques in the areas near the coast to fishing with hooks.

In the present circumstances, in addition, the lack of commercial activity in the markets of the South and the low global acquisitive power of the local market result in the fact that fishing is nothing more than a craft in Bahia; thus, in 1966 a total of 28,345 fishermen brought in a total catch of 14,407 tons; of these, 11,232 were fish and 2,768 were crustaceans. In 1968 the catch increased to 15,162 tons (11,574 of fish, 3,185 of crustaceans and 403 of other marine animals).

The existing fishing equipment is likewise rudimentary, with only 9 motor vessels in the state in 1966; 413 sailboats and 1,864 rowboats. The total load capacity of this entire fleet was of 2,015 tons in the same year.

The balance of all these possibilities and difficulties existing for maritime fishing seems to be that recommended by Admiral Paulo de Castro Moreira da Silva to the "Programme for Integral Development of Reconcavo" such as the promotion of fishing activity on an industrial level specialized in high quality fish destined for the markets in Southern Brazil; and likewise for the Bahian market, upon the gradual increasing of the acquisitional capacity of said market.

Another important possibility is the intensification likewise on an industrial basis, of fishing for prawns and crustaceans also destined for markets in Rio de Janeiro, Sao Paulo and the South in general, as well as for the local market.

In general, the normal center of development for these fishing activities should be the Ilhéus or some other Port in the Southern area of the State of Bahia; taking into account in this choice, the existing resources as well as the experience already acquired in the area with respect to deep sea fishing which is now practiced in spite of having only extremely rudimentary means at its disposition.

With regard to fluvial fishing, the possibilities offered by the Sao Francisco river are outstanding.

### Hunting

Brasil is a country with great potential for wild animal hunting, both mammals and reptiles, the skins of which offer many possibilities. The total value of furs and skins of wild animals captured in Brasil in 1967 was 12,7 million N Cr, equivalent to some 4,2 million US dollars. Of this total, a fur production of 949,405 N Cr. equivalent to approximately 315,000 US dollars, corresponded to the State of Bahia, the principal catches comprised species of wildcat, veado and lizard, as well as wild boar; on the other hand, catches of valuable alligator and of other species, such as the ariranha and the capivara, were rare,

A detailed statistic on the wild animal catches in Bahia is included in Table 1.5.8 of the Appendix.

### 1.5.6. MINERAL RESOURCES

Bahia is a State well endowed with mineral resources, some of which are already being exploited. Nevertheless, there are many other mineral reserves, only just detected but not assessed, and even less, evaluated; and it is probable that a geological investigation and systematic mining would result in the knowledge of new deposits and possibilities in the State.

#### Exploration of the Sub-soil

The problem of the lack of exploration, which makes it impossible to establish a really rational and congruent mining policy, is not, however, peculiar to the State of Bahia, but rather exists with greater or lesser intensity, on a national scale. Consequently, the Federal Government, conscious of the importance of this question, started a programme of investigations "O Plano Decenal para Avaliação dos Recursos Minerais do Brasil, 1965-1975".

This programme is co-ordinated within the Secretariat of Mining and Power by a "Departamento Nacional da Produção Mineral" (National Department for Mineral Production). To obtain greater ease in handling, it is planned to divide the country into Mining Districts, one of which will exactly coincide with the State of Bahia. The surveying activities are delegated to the "Companhia de Pesquisa de Recursos Minerais" (Mineral Resource Investigation Company) or C.P.R.M.

This federal effort however, has still not become an adequate means of co-ordination. Public entities such as SUDENE, the National Nuclear Energy Commission (CNEN), the San Francisco and Cacao Valley commissions (SUVALE and CEPLAC), "Petroleos do Brasil S.A." (PETROBRAS) and

others take part in one way or another in the mining exploration; this is apart from the forceful superimposition of Federal, State and Municipal action.

Besides, the private sector itself - including some international organisations - also carries out explorations. It is evident then that an improvement in the co-ordination of all these activities - including the interchange of information and the management of the preselection for the work - could mean an acceleration in the surveying; this in turn, would serve as a basis for mining policy with maximum scope and efficiency.

### Resources being exploited

In accordance with what has been explained, the only mining resources in Bahia to which it is possible to refer with absolute certainty are those already being exploited; and there is still room for restraint in the assessment of the concrete news and rumors of other mining possibilities not confirmed by scientific procedures. This last item, however, must not be interpreted as minimising the generic importance of resources yet to be detected; but rather as a new insistence upon the necessity of systematic mining exploration in the State.

In continuation, then, we describe the resources being exploited.

### Lead

Lead is found in the Bequire-Macaubas area, in the central-western region of the State, and appears primarily in the form of galena. The reserves are not known but everything indicates that they are of importance. Access to the region, by means of the

Sao Francisco river and an asphalt-paved highway, is satisfactory.

The production which in 1964 was of 161,000 tons increased in 1965 and 1966 to 180,000 tons; in 1967 to 200,000 tons; and to 230,000 tons in 1968. Said production represents from 55 to 60% of total Brazilian production.

The mineral is concentrated at the mine site; the metallurgy is carried out in Santo Amaro, yielding lead ingots.

### Copper

Copper is found in the form of chalcopyrite and malachite in the area of Curaçá, in the North East of the State. The calculated reserves are of 60 million tons of mineral with a copper content of 1,3%. There is also news of deposits in other areas such as Santo Sé, Bom Jesús de Lapra, Canudos and Maragogipe, deposits whose value in any case is of maximum interest.

The exploitation of Bahian copper ore may be considered to have just been begun. The firm Minas de Caraiba S.A., member of the Pignatari Group, extracts the mineral in still small quantities (2,623 tons of ore content in 1968). The total project, approved by SUDENE, foresees an investment of 120 million US dollars for a projected production, perhaps very long-term, of up to 70,000 tons of metal.

The primitive project foresaw concentration of the metal to 32% at the mine site, and carrying out the metallurgy in the Aratú Industrial Center. Presently the possibility of installing the metallurgy near the mine is being considered, once the conditions which imposed the previous solution have been modified.

1 - 24

In general, the possibilities of mining and metallurgical development of the Juazeiro-Senhor do Bonfim - Santo Sé triangle, based primarily on copper, are considerable, making it advisable to intensify the investigations there. It must be taken into account that there is abundant electrical energy in this area, the supply of which could be increased with relative ease, originating in Paulo Alfonso. The railroad is usable, though it should be improved; and the highway network only needs local conditioning since the Juazeiro - Feira de Santana - Salvador highway already adequately assures the primary connections.

### Magnesium

Meerschau mines are found situated in Brumado and Santo Sé. Production, which has increased from 85,410 tons in 1964 to 132,000 in 1968, represents around 90% of the production of Brazil. The reserves have not yet been evaluated.

Two firms are carrying out the exploitation: "Magnesita, S.A." which does the extracting and roasting in Brumado and transports the fritted mineral by railroad to Belo Horizonte, where it is designated for production of refractory; and "Mineração Costela" in Santo Sé which extracts and roasts the mineral which it then sends to Sao Paulo and to Cerámicas Caetano for the manufacture of refractory.

### Manganese

The mineral, in the form of Manganese dioxide, is found in the areas of Jacobina, Bonfim, Nazaré, Santo Antonio de Jesús. The reserves are unknown.

The concentrated mineral is transported by railroad to Cojuca and Aratú where it is used for the ferro-



alloy industries located there. Production which reached some 47,8000 tons in 1966 has declined to 3,429 in 1968.

### Chromium

Chromium is found in the form of chromite in the area of Campo Formoso. Production which reached 29,000 tons in 1965 declined to 13,514 tons in 1968. This is all destined to the ferroalloy plants already mentioned in Pojuca and Aratú where it is likewise transported by railroad.

### Other metallic minerals

Finally the production of beryllium (11 tons in 1968) and of Columbite (4 tons in 1968), rudimentary in their extraction procedure, should be mentioned. The mineral is exported without any kind of transformation in the State.

### Non-Metallic Minerals

The State of Bahia also possesses abundant and valuable resources of non-metallic minerals.

With respect to Limestone, there are deposits on the floor of the bay of All Saints, estimated at 80 million tons, which are used for the fabrication of cement by two plants whose joint capacity, foreseen for 1972, is as high as 350,000 tons. Still more important limestone deposits exist in the interior of the State, SUDENE having approved two new cement plants in Campo Formoso and Itaucú, respectively. In total, it is hoped that a cement production on the order of 1,000,000 tons will be reached in the whole of the State.

There are, in the region of Itaperaba and Poços important deposits of Asbestos, of which 116,000 tons were obtained in 1966. Exploitations are presently in the course of reconversion, asbestos consumption being assured through importation from Canada, which it is hoped will cease in 1971.

A yield of 7,731 tons of Talcum was obtained in 1968, equivalent in round figures to 20% of the total for Brazil and destined for domestic consumption and industrial use in insecticides as the vehicular material.

### Marine Salt

Is obtained in the brine pits of Itaperica though in relatively small quantities (1,500 tons in 1965; 3,000 tons in 1966 and 1,000 tons in 1968). It must be noted that Brazil is a salt-importing country.

There are deposits of Brazilian Pebble and Marble, exploited very rudimentarily, in the area of Juazeiro. In 1968 the production of Brazilian pebble was 69 tons and of marble 5,782 tons. Of this production 60% is exported to other areas of Brazil and even abroad.

The production of Barytine, dispersed through various points of the State, is based on small, handicraft type quantities and reached a total of 99,000 tons in 1968, representing the total Brazilian production. Fifty percent of same is exported, primarily to Argentina.

### Petroleum and Natural Gas

Of a total of 9,5 million m<sup>3</sup> of petroleum obtained in Brazil in 1968 the State of Bahia produced a total of 8,2 million m<sup>3</sup> from the oilwells situated in the Reconcavo area.

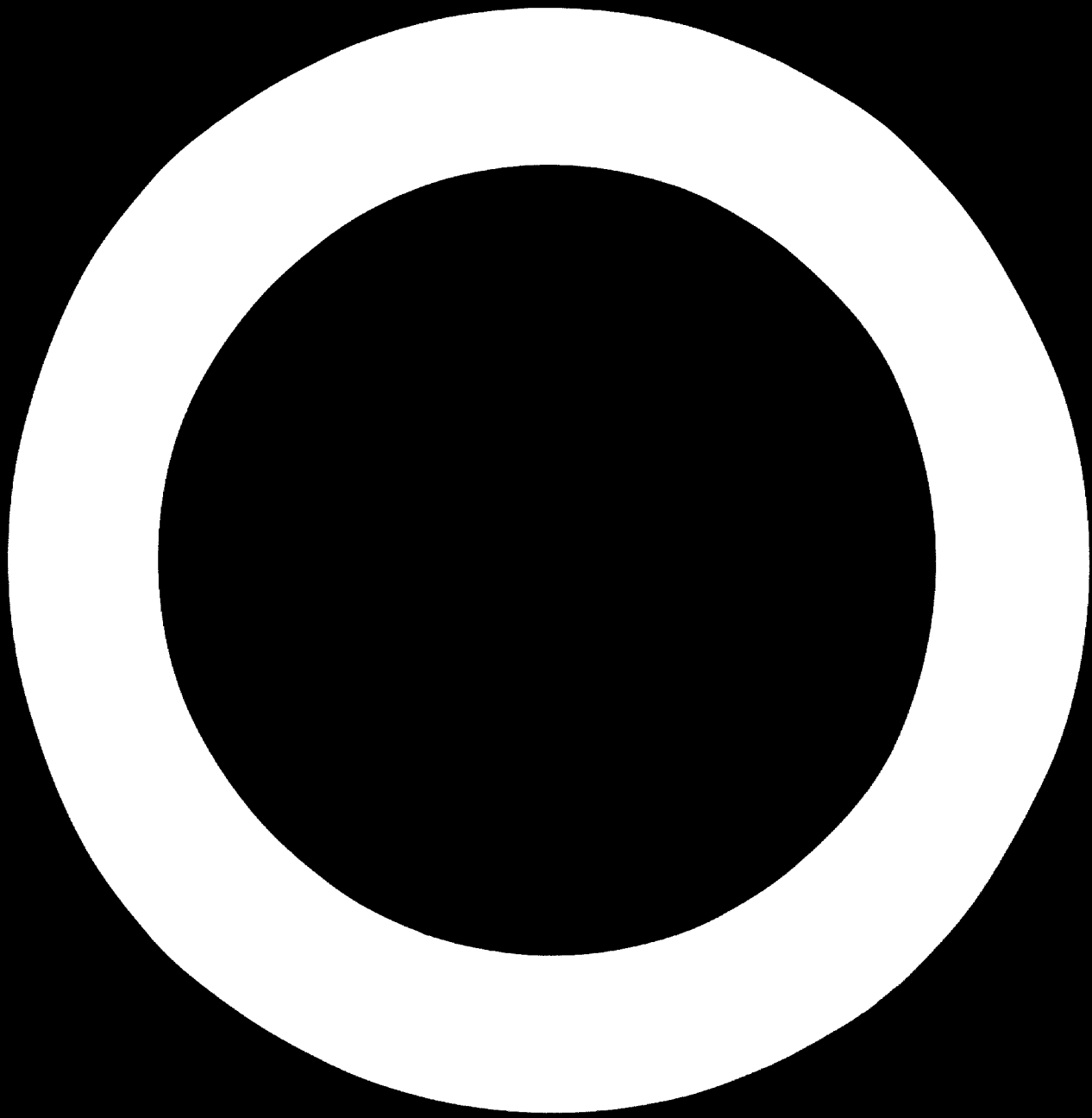
The main producing oilfields were those of Agua Grande, with 2,1 million m<sup>3</sup>; Buracica, with 1,1 million m<sup>3</sup>, and Miranda with 2,3 million m<sup>3</sup>.

Bahian petroleum is extremely rich in paraffins, so that to a great extent it is exchanged for petroleum with less paraffin content and more appropriate for manufacture of fuels in refinery.

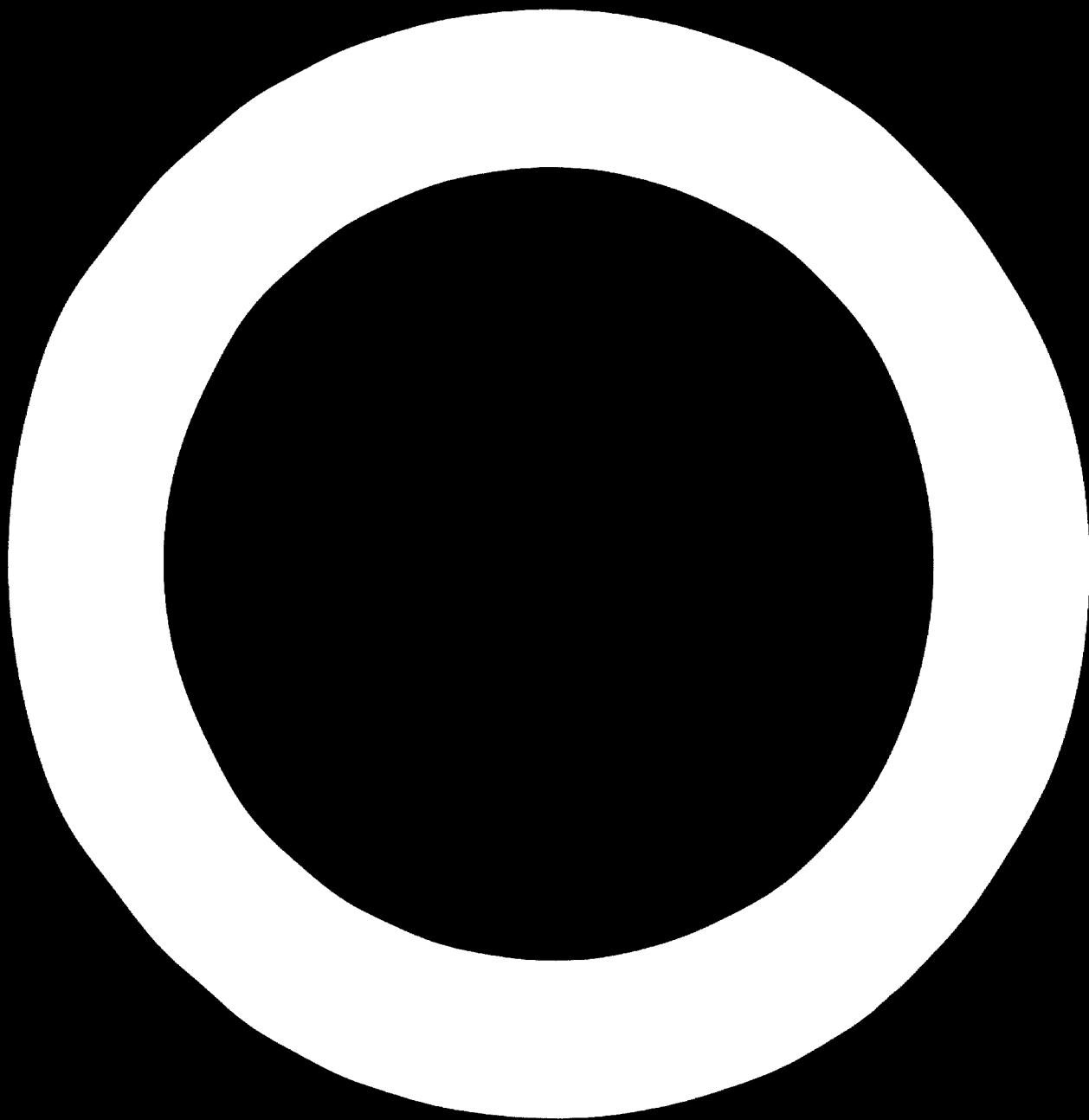
With respect to natural gas, Bahia produced 964 million m<sup>3</sup> in 1968 of a total 983 million m<sup>3</sup> obtained in all of Brazil. Since at present there is no use for all this gas, except for a small percentage used the manufacture of gasoline, the majority of this gas yield is reinjected, thus providing pressure for the oilwells.

It is hoped that in the near future, and through the development of the petrochemical planning already begun, it may be possible to achieve a greater utilization of such a valuable resource.

Petrobrás continues to carry out surveys in the areas of Tucano, Almada, Costa del Sur del Estado, etc.



1.6. INSTITUTIONS AND INCENTIVES OF THE PUBLIC SECTOR  
FOR THE DEVELOPMENT OF INDUSTRIALIZATION



**1.6. INSTITUTIONS AND INCENTIVES OF THE PUBLIC SECTOR  
FOR THE DEVELOPMENT OF INDUSTRIALIZATION**

As was said in the general Introduction of the Study, the State of Bahia is located in the North East of Brazil and therefore participates in the policy of general development, that the Federal Government is implementing in this zone through the Superintendencia do Desenvolvimento do Nordeste (SUDENE), the Banco do Nordeste do Brasil (BNB) and the Technical Office of Economic Studies of the BNB (ETENE).

The guidelines for this development policy were reflected in the Introduction, but due to their importance, it would be convenient to remember briefly. Concretely, it is foreseen that the development of said region be based on the following points:

- a) An industrialization process.
- b) A improvement process in the agropectuary sector by increasing the productivity of tropical cultivations in the costal strip, the improvement of extensive cattle-raising in the inland by installation of irrigation systems in this zone.
- c) Commence to populate at large scale the pre-amazonic zone.

In order to organize and make feasible this economic development policy of the Northeast, the Federal Government has established several financial and fiscal incentives for entrepreneurs and investors who will come to the zone promoting new enterprises and industrial activities. The States, in the area, on their on part, have established several complementary incentives within the scope of their constitutional responsibilities.

The State of Bahia, naturally, has not been an exception to the rule, and finally established in the State an institutional fiscal and financial system to aid the promotion of industrial activities in the State on the part of the private industry and initiative. This system is described in the following pages, along with the federal incentives system applicable to the Northeast States.



1.6.1. FISCAL INCENTIVES

a) At Federal Level

1. Brazilian enterprises may apply 50% of the amounts to be paid in taxes on the profit to industrial, agricultural, telecommunications and tourism projects for installation in the Northeast. Those amounts will be automatically taxfree.
2. Brazilian individuals may deduct from their gross income for income tax purposes, the money used to purchase shares of industrial, agricultural, telecommunication and tourism enterprises located in the Northeast, this deduction however may not exceed 50% of said gross income.
3. Total income tax exemption for manufacturers of products not yet fabricated in the Northeast, during a period of ten years, with possible extension to 15 years.
4. 50% tax exemption to manufacturers established in the Northeast, manufacturing products similar to those now fabricated. Therefore in accordance with paragraph 12, tax reduction for these types of enterprises is 75%.
5. Exemption of all taxes and customs on imported equipment, which is not fabricated in the country.

To obtain the three last incentives, the specific request of the entrepreneurs to SUDENE is required. The two first concepts are automatically applied and do not require previous authorization.

b) At State Level

1. Total exemption of the State tax on traffic of merchandise, ICM or imported equipments, that have no national similar.
2. Authorization to deduct from the State tax on traffic of merchandise the tax paid at the purchase of national manufactured equipment.
3. 60% exemption of the State tax on traffic merchandise and deposit for the same amount with the DESENBANCO for a 5 year period. One year after the deposit is made, the industry may request a refund to be applied as investment in the very enterprises, purchase of shares of other Bahian industrial enterprise or on infrastructural works throughout the agreement with the Government of the State, and even on labor training and technological research.

It is to be remembered here, that in Brazil there are only two indirect taxes applied to industry: One Federal, IPI, (tax on industrialized products) with variable types of application and the other one from the State, ICM (tax on traffic of merchandise) whose percentages vary depending on the nature of the commercial operation; wether out of the State or within the State. In the case of the State ob of Bahia the percentage of application for operations within the State is 18%, and for operation out of the State 15%.

The IPI is applied only to the operation of the commercialization of the product, and the ICM is applied to any kind of commercial operation.

The two taxes work with debit and credit, namely, the tax paid on the purchase of the merchandise and is deducted from the tax to be paid at subsequent sale of the same merchandise, product of the one purchased.

## 1.6.2. FINANCIAL INCENTIVES

### A) At Federal Level

A company whose project has been approved of by SUDENE may receive up to 75% of the total funds required for installation in accordance with such project. This financial participation may also be made in the form of loans, as long as the applied rules are complied with.

Actually percentages that the enterprise may receive vary from 75 to 30%, application depending on the degree of importance of the project for the economy of the Northeast. Such importance is determined in terms of labor occupation, purchase of local raw materials, location in more underdeveloped zones, etc.

In the case of Bahia the financial incentives are also applied to society participations in chemical and petrochemical projects of PETROQUISA, State company for development and operations of chemical and petrochemical activity in the country.

As for financing sources, the most important to be quoted are: Banco Nacional do Desenvolvimento Económico S.A., and Banco del Nordeste del Brasil S.A., which are institutions belonging to the Government of the Republic and are specialized in long term credit for economic development. The latter operates only in the Northeast region and the former works nationwide and only in largest volume loans.

To request credits from these banking institutions, from a certain limit, projects must be approved by SUDENE.

The Banco do Brasil S.A., is also an institution of the Federal Government, engaged mainly in financing small and medium industry and commercialization of production.

### B) At State Level

By creating the Banco de Desenvolvimento del Estado de Bahia S.A. (DESENBANCO), the Government of the State has provided an important instrument for the promotion of the industrial production by means of long term loans and low sales of interest.

It also helps to the financing of working capital of Brazilian industries.

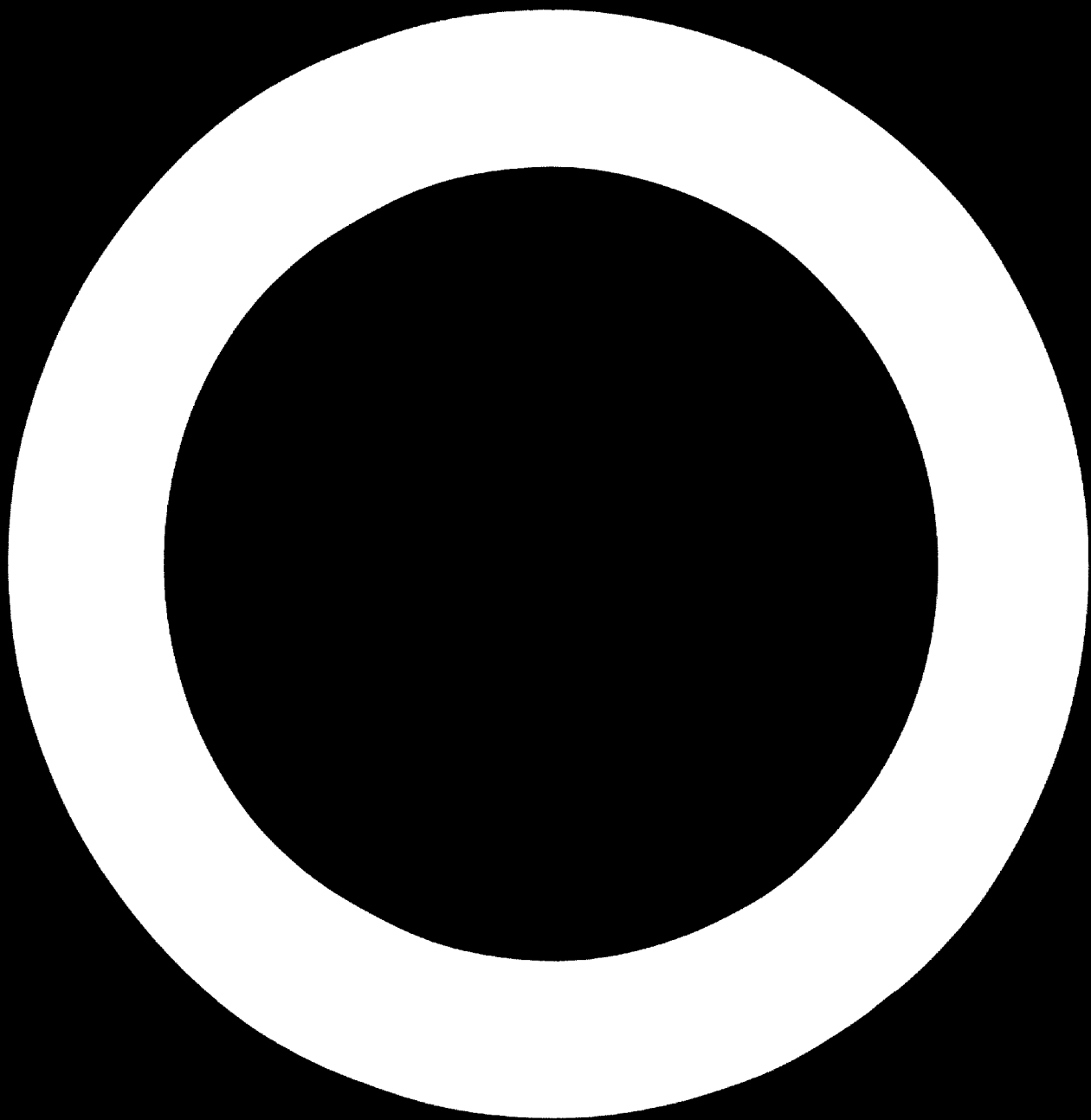
The Government of the State also created a commercial bank, the Bank of the State of Bahia S.A., which before the establishment of DESENBANCO worked along the line of long term credits for the purchase of equipment, installation of small and medium industries and increase of working capital.

The financial incentive most recently offered by the State, still in phase of regulation, is the possibility opened to the Bahian industries to sell their shares (up to the limit of 50% of the total funds required by the project) to industries which obtain 60% in the ICM in the form of deposits in the DESENBANCO in accordance with paragraph 3 of the fiscal incentives of the State of Bahia, above mentioned. Projects for which the use of these resources is anticipated, must be approved by the State Industrial Development Council.

### 1.6.3. LOCATIONAL INCENTIVES

This section covers the aids made available by the State of Bahia through the Aratú Industrial Center and the industrial districts which are being established in the main development centers, where land is sold to enterprises at low prices, having all the necessary infrastructures for the operation of the concern.

1.7. SERVICES FOR INDUSTRY





## 1.7. S E R V I C E S F O R I N D U S T R Y

Regarding the high proportion which the services sector represents in the formation of the net product of the State of Bahia (as also takes place in the rest of Brazil) (1) it would not be fitting to think that said sector might present a limitation of any kind for the industrialization program of the State. However the overall quantitative aspects are not the only ones to consider, since the geographic situation and, particularly, the orientation with respect to the nature of services and the clientele using these services, should primarily be taken into account in this rapid evaluation of the adequacy of the tertiary sector as a supporting element for industrial development as, in fact, is demonstrated by the services in the State of Bahia.

Concretely, it best serves our purpose to concentrate our attention on the service subsectors most significant for the functioning of industrial plants, that is: banking and financing institutions, insurance, transportation and the commerce supplying inputs of elaborated industrial goods, tools and equipment.

(1) According to all the data of the Getulio Vargas foundation, the Services Sector contributed 54,8% in 1967 of the Net Industrial Product of said State. For the entire country, said proportion was 54,5% in the same year. In this respect, see data published in the "Conjuntura económica", June, 1970.

### 1.7.1. BANKING AND INSURANCE

From the point of view of the concrete existence of banking establishments, there are in the State of Bahia (data from 1968) a total of 9 central banking offices and 349 agencies, of which 42 belong to the Banco Nacional do Brasil.

All the important municipalities and, of course, Salvador, have essentially an adequate number of banking establishments, at least with respect to the starting phase of an industrialization program. With regard to private insurance services, the same could certainly be affirmed.

However, the problem of the real efficiency that this banking system, essentially adequate with respect to its material existence, can offer to an existing industry, or one yet to be established, in materials for facilitation of financing their fixed investments and circulating capital merits separate consideration. In respect to this aspect, it would be helpful first to distinguish official from private banking, given the different nature of their motivations, their reason for existing and their form of operation.

As speaking of institutional type problems has shown, official financing granted through the National Bank of the Northeast and other similar entities is extremely generous; even though its amount depends on the classification of each project, there are occasions in which an investment of 15% to 20% of the necessary total on the part of the promoter may be sufficient to obtain any funds needed for the total investment; and even disregarding cases treated so favourably, 40% may commonly be considered the normal percentage of investment to be made by the private promoter.

Another favourable facet of official financing is the low interest rate usually less than the amount of annual inflation, and consequently negative. This same characteristic can also be cited for official loans, granted through official banking entities, for financing of circulating capital.

In spite of these circumstances, a good number of the entrepreneurs interviewed were clearly disinterested in obtaining these official credits which they qualified as inoperative in relation to the medium and small-sized firm. On the contrary, in the case of very large firms - some of them with investments of up to 50 million U.S. \$ - the executives interviewed did not show any hostility at all in respect to official credit or its concession, debenture or control.

These last aspects, however, are precisely those which seem to constitute the major motive of criticism and opposition by the small and medium entrepreneurs who showed a hardly favourable attitude to official credit. Concretely, the concession of credit can demand a detailed and costly transaction of 12 to 18 months duration. This delay does not seriously affect the large firm which, seemingly on more than one occasion, acts by anticipating financing so that the project progresses in its execution, being compensated for this effort by obtaining "a posteriori" large sums of cheap money.

The precision of the controls was another of the inconveniences of official credit, found on the part of small and medium entrepreneurs. On the other hand, the executives of large firms exhibited the rigorous documentation submitted and the detailed expedients for checking and authorization of the investments item by item, putting more emphasis on the facet of rigor and honesty implied by this high level of bureaucracy than on the slowness or the inconveniences of the same.

In an interview held in the Federation of Industries in Salvador with a group of 9 Bahian entrepreneurs, the problem of official credit, and more concretely, the necessity of efficient and rapid official aid to the entrepreneur with innovative initiatives and ideas, was clearly planted, without, however, offering concrete solutions to such an important question.

With relation to the problem of private credit to industry, we maintained contact with high executives of two private banks. Both coincided in showing the preference of their firms for short-term operations, and quite especially, for those related to financing classical operations, mainly those referring to the traditional exports of tobacco and cocoa, so vitally important for the Bahian economy. People very familiar with the economic system of the State and the country, agreed on the need to eliminate conditions of competitive inequality between banking and financing associations (authorized to grant advantageous interest to their debtors and to make it easier to borrow money at higher interest rates). In their judgment, this inequality of conditions constitutes a fundamental cause for the markedly conservative policy in the concession of credit by private banking.

It would be of maximum interest, certainly, to complement and objectify all this circle of opinions gathered with objective data from the banking entities in the State of Bahia. Such data exist, but unfortunately, they are very incomplete, since they only allow the balance of the consolidated accounts of assets of banking in Bahia and Brazil to be known at the end of the exercise - concretely, the 31.12.1968 - while the minimum necessary would have been to have a notice of a monthly balance throughout an exercise, or of the annual mean of such balances.

All in all, and since as a last resort they represent an orientation, the incomplete figures available have been gathered, in absolute terms, in table 1.7.1.; and in percentage terms (of Bahia in comparison with all of Brasil), in table 1.7.2. The results naturally do not take into account the seasonal variations in production. In spite of this fact, it may be useful to comment briefly on them.

Table 1.7.1. shows that the total figure for loans and credit for all banking represents in Bahia 3,2% of the national total, so that the net interior product of the State is equal to 4,15% of that of Brazil. On the other hand, the total loans (4,32%) of Bahian banking with respect to the consolidated account for Brazil remains above the contribution of said State to the internal production of the country. This circumstance can be explained by the fact that under the item "other credits" those granted to the public sector are also included. The result ultimately obtainable is, that the contribution of loans by banking to productive sectors of the State of Bahia is in proportion, when less, with the economic activity of said State.

From the point of view of sectors, industry certainly does not seem to be neglected, in that the slightest preference of private credit - relatively more interested and in absolute terms, in the financing of commercial activities - is compensated for by the great attention paid to the Secondary Sector of the State by Official Banking, which dedicates 3,65% of its consolidated balance in the country for an industry that only contributes 1,44% of the internal industrial product of Brazil.

The data described, in spite of their obvious imperfections, seem then to confirm many of the opinions gathered in the interviews with entrepreneurs, executives and bankers. Private credit seems to favor with its preference solid commercial operations before industrial operations, nowadays of evident risk. Official credit is abundant

but its efficiency seems rather to depend on grant, debenture and control procedures and the application of somewhat academic criteria on occasion - this being the opinion of a banker and 3 or 4 small entrepreneurs - in the very planning of the operations and in the establishment of selective criteria.

It is important however, not to separate all the problematic situations described from the generic problems of the monetary policy in Brazil, and more concretely, from the policy of "controlled inflation" to which reference is made further on. In our opinion, the present circumstances and orientations may lead to an excessive lack of money and to evident fomenting of monetary speculation, to both of which aspects more extensive reference will be made in the second part of the study. As a consequence of this, the middle and small firms, forced to acquire their inputs under "hard" conditions and obliged by the market to sell on credit, come up against very grave problems in financing their currency and incur grave interest costs, with serious detriment to competitiveness and to their own possibilities for self financing, both of which aspects were clearly detected in the interview.

Evidently, the process is the opposite for those who have at their disposition a favourable endowment of their own capital, or the industrial support of banking entities with whom they maintain some sort of financial entailment. In such circumstances, Official Credit may constitute an excellent business for those who - the paradox has merit - can finance it with their own means and may turn out useless for those who, having initiative and sales possibilities, lack their own capital and are not in conditions to wait out the slow transaction of official financing.

The speeding up of this last element, with a view to the small and medium firm, could consequently constitute a primary objective of an industrialization policy; therefore, it would be fitting to investigate at length these aspects in the second phase of the present project.

It is especially felt that application of formulas similar to "credit insurance" could be of particular interest. Concretely, the purpose of this would not be to separate private credit (with its particular sense of smell and clear vision for the qualification of the opportunity for operations) from this financing; but rather to allow the Public Sector on this basis, to reduce the risks to a reasonable limit.

### 1.7.2. TRANSPORTATION

The situation and availability of service of the different transport systems that operate in the State of Bahia, have been described with sufficient reflection in the study of Infrastructures within this same Part One of the Study. From said analysis it can be deduced that maritime transport facilities are inadequate because of the deficient port installations of Salvador and Ilhéus, the port designated to attend to the necessities not only of the Cacaueira region, but in general, to all of the Southern part of the State, and which should, therefore, be the natural embarkation point, from the "Southern Extreme" of Bahia, for all wood which is presently detoured to the neighbouring ports of the State of Espiritu Santo.

In respect to railroad transport, they only hold certain utility for mining firms, those of oil products, construction materials and cement. Railroads are not frequently used as a means of normal interior transport for other types of products.

The burden of the great amount of interior transport falls, as is known, on highway transport. In general, the availability of this type of transport is adequate and few industries visited, signalled any problem in this respect. However, the following facets are to be noted:

- .Even when there exist some large-scale transport firms - such as one called "Estrella del Norte" - the small firm predominates in highway transport of goods. Frequently they are family or individual firms in which one or more owners employ two or three vehicles with the help - if necessary- of a small number of employees.
- .Since BR-116 is presently the primary means of transport from the South to the North of Brazil, the best transport facilities are found in the localities situated along the same (Feira de Santana, Jequié and



Vitoria da Conquista, as major examples); since more favourable opportunities in volume and price for offering of services exist toward the South, transport is based on taking advantage of the return of trucks from the North toward the industrial zones from which they came.

The opening of BR-101, parallel to the coast, will improve the availability of transport in the Reconcavo area and more especially in the Cacuera and the extreme South; these areas, being - as is the whole coast - the most densely populated areas of the interior of the State, are those which have at their disposal a relatively more modest level of transport service.

As a summary of that already set forth, it is fitting to conclude that, as a whole, and thanks to the highway transport facilities, the availability of transport services are adequate for the existing industries and for those yet to be installed in the State of Bahia.

### 1.7.3. COMMERCIAL SERVICES FOR INDUSTRY

In contrast to acceptable facilities observed in other services, the availability of warehouses and establishments for the sale of standardized industrial tools, standard fabrication of small equipment (electric motors and liquid fuels, pumps, valves, etc.) and spares, are by all means insufficient in the State of Bahia, which is one of the most serious bottle-necks for the industrialisation process.

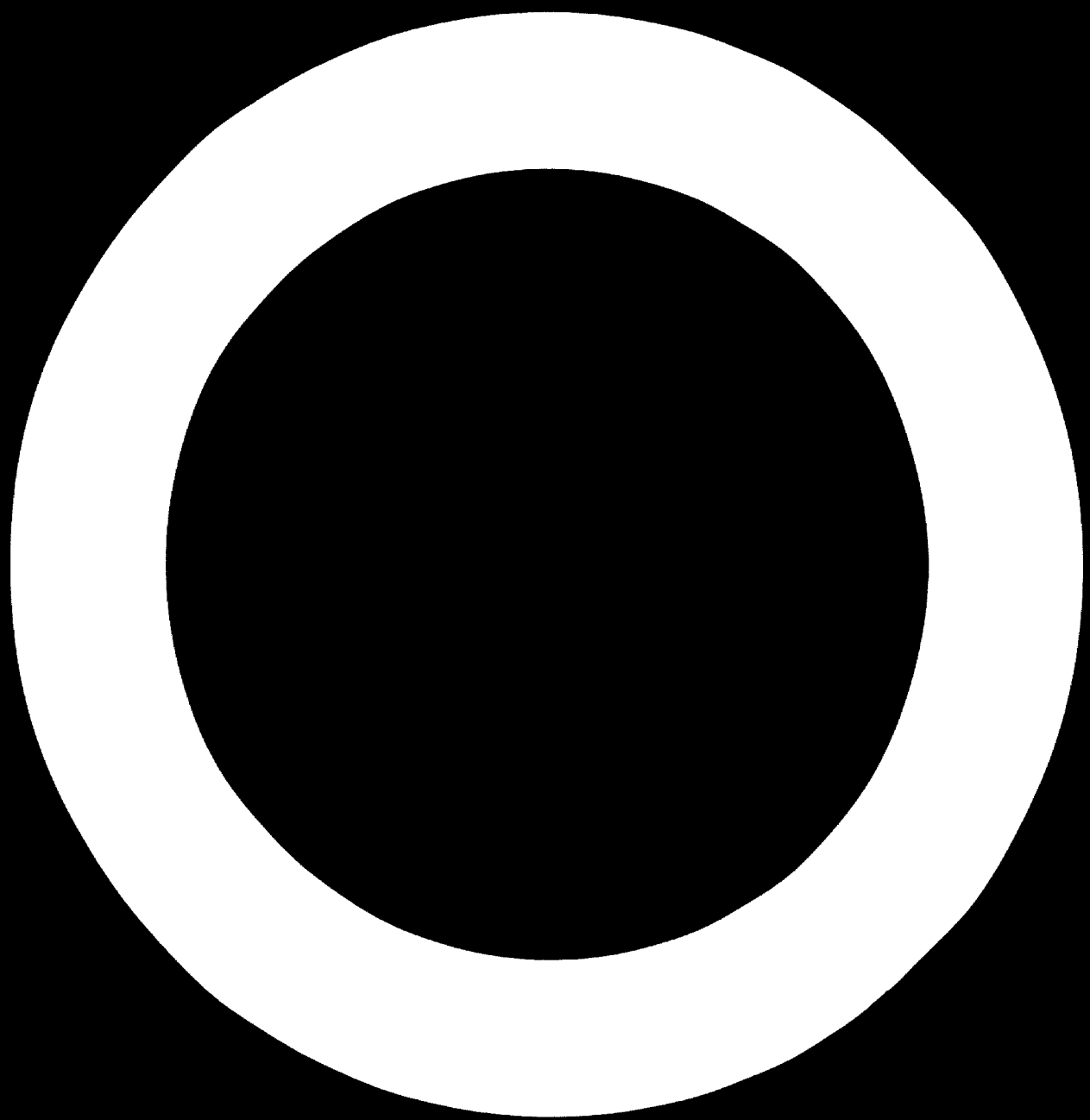
In the case of large size enterprises the problem is being solved by creating large stocks of this type of materials, which in the present inflationary situation in Brazil, is not considered as a very serious inconvenience by the entrepreneurs, because it is interesting for them to invest in active materials of easy use, in this situation. This policy is certainly not correct nor desirable in a normal monetary situation, nor is it an adequate formula to obtain competitive cost prices for final products.

On the other hand, the small and medium enterprise cannot practice - not even if desired - this policy of large stocks of equipment, tools and spares. This is reflected in serious inconveniences, such as long interruptions of the productive process as a consequence of minor damages and high costs to obtain damaged parts or equipment. In this respect, visits to industries have provided evident examples, such as improvising home made spare parts as a provisional remedy, with high costs and poor quality, or the necessity of a small category entrepreneur, who would have to drive 4,000 km in his own car to get to Sao Paulo and return, as the fastest way to replace a 30 HP (or less) motor, damaged to an extent in which local repair was impossible and would have been uneconomic.

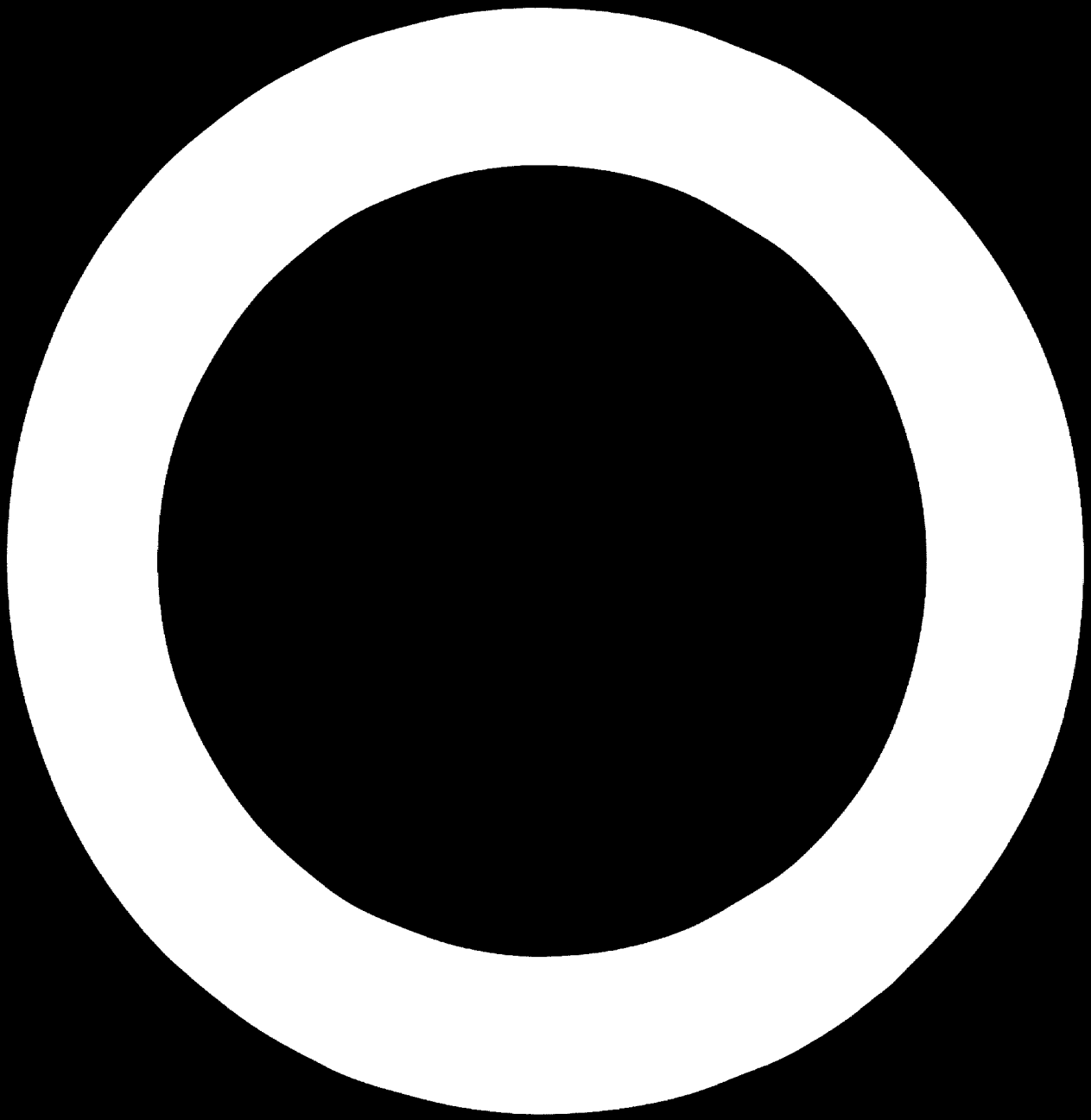
Looking at these facts detected in a very generalized way during visits to production centers, it can be deducted that the lack of good service for the industry may constitute a serious hindrance for the process of industrialization in the State of Bahia.

Consequently, the possibility of establishing in one or two strategic points of the inland industrial warehouses of co-operative type or sponsored by the government with some kind of financial help, is something that should be carefully analyzed in subsequent phases of the "Feira de Santana" project. Evidently it is required to determine not only the items to be stored in relation to the necessities of the industry, but also the minimum quantities, replacement levels and maximum stocks for each item, investment to be made and possible formulas to materialize the project from the legal and financial points of view. Finally, the best location will have to be determined.

The present inflationary situation may not be attractive for the participation of large enterprises with strong financial availabilities, however, from the point of view of general interest and production efficiency, the participation of above enterprises would be highly interesting. Because of that, it will also be necessary to investigate the probability a program of this nature could offer to eventual participants



1.8. STRUCTURE OF INDUSTRIAL PRODUCTION



**1.8.1. INDUSTRIAL CENSUS**

In 1960, date of the last available industrial census, there was in Bahia, aside from construction - activity, not included in same, a total of 5,960 industrial establishments employing 50,023 people.

The greatest part of them were small size industries, which cannot be considered as real manufacturing establishments, due to the scarce number of workers employed, because of installed driving power or obtained production values.

Less than 1,200 establishments had over 5 workers less than 500 with 10 or more installed horse power and 1,300 reaching a production value of over a million of cruzeiros in 1959 (Table 1.8.1.).

Looking at these indexes and selecting as the more significant aspect the number of employed personnel, which affects all sorts of activities, it can be said, that about 4,800 in the census were handicraft shops, out of which almost 1,000 could be considered as small or medium size, and a little over 200 as medium or large firms, with more than 20 employed workers.

Considering which were the best represented industrial fields, emerges a clear vision of the incipient level of industrial development reached in the State at that time, essentially linked to the primory development of certain resources, to the construction activity and to the consumption requirements of a population - whose low standard of living prevents consumption of a mayor part of industrial products which are not of primary necessity.

Mining industry was represented by a total of 29 industries and 7,380 employed people, but of this

total the largest percentage was covered by quarry operations and other non-metallic minerals (29 firms with 6,739 people), being evident, in spite of the abundant metallic mining resources, the scarce development of metallic mining activity, much more meaningful to the industrial development.

Among processing industries, the greatest number of establishments and employed people correspond to food industries and construction materials (non-metallic minerals), with more than 1,800 firms in each activity and almost 10,000 and 8,500 employed people, respectively, with very low rates of employed people per establishment, which evidences the small size of most of them.

Within food industries there are over 1,200 firms in the bakery, confectionary, pastry and ice-cream business, which constitutes a typical craftsmanship activity, employing 4,500 people. In second place, with the highest number of firms (221) figure those dedicated to processing toasting and grinding of alimentary products, which in many cases can be hardly considered as manufacturing activity. And certain industrial branches within this group of industries were practically non-existent (there were only six fruit and green vegetable canning firms, with only 34 employees). The only food industries of a certain importance were the sugar plants at a number of 13 and with 2,000 employees. Alimentary paste and biscuits factories as well as slaughter houses showed an incipient development.

In the non-metallic ores sector stand out those establishments engaged in the fabrication of roof-tiles, bricks and tiles, also characterised by their merely handicraft nature. The average number of workers employed per establishment is less than three, being 1,500 the establishments and 5,500 the people employed in this activity. Due to the small number of people employed the



small entity of lime factories is remarkable: 183 in total. Practically only a cement plant can be considered as true industry and some others engaged in the fabrication of cement pieces and asbestos-cement manufacture.

Traditional sectors, such as tobacco, with 56 firms and 3,170 people, and the textile sector with 104 and 4,311 respectively, were also amongst those better represented.

Among the latter it is to be noted that the only firms of a certain entity were those of spinning and cloths essentially cotton, at a total of six with 2,736 employees. Textile establishments, among them those engaged in the manufacture of hard fibers, so abundant in the State, are also characterized by the small dimension and rusticity of many of their installations.

Although the chemical sector stands out with a high percentage of the total of the employed population in the industry, it can be said, that almost the totality is concentrated in very specific sub-sectors. On one side, there is the petroleum refinery which employs more than 1,800 people, and on the other hand are those firms engaged in oil and fat extraction (mainly vegetal) which number 18 with 1,371 employees. The remaining sub-sectors were practically absent from the industrial scene of Bahia, along with other sectors that may be considered together with the chemical sector, for example those of the pharmaceutical and medical products, perfumes and soap manufacture or plastic goods.

The development of the wood, leather and fur industry is not in accordance with the available resources.

The wood sector, with 200 establishments and 1,600 employed people, is also characterized by a situation of industrial minifundium.

The tannery sector, with 300 firms and 1,600 people reflects a similar situation. On the other hand it is basically engaged in performing primary operations, being - scarcely represented those engaged in the manufacture of finished products.

As for consumption goods industries (primary needs), such as dresses, ready made clothes and shoes or furniture, the predominant size is also very small, with 31/ establishments and 1,858 people the former, and 512 and 1,903 respectively, the latter.

Within the clothing sector, most of the establishments are engaged in handicraft shoe-making.

Within the furniture industries there are, without doubt, many handicraft shops.

The metallurgical sector has a minimum representation, with 55 firms and one thousand workers. Only two establishments have a certain size within the basic metallurgy field. One engaged in lead fabrication and the other one in steel, with 150 employees each. Forge-shops and foundries offer the characteristics of small work-shops.

In respect to other metal processing industries, - only those of transportation material have a certain entity, but that means basically into account their dedication to railway car repairs, corresponding to the own railway enterprises.

Mechanics, electrical and communications material industries can be considered totally absent from the Bahian industrial scene during the sixties.

Summarising, with exception of the oil refinery, a cement factory, sugar plants, tobacco factories, cotton textile industry and vegetal oil extraction, the census shows

a primary level of industrial development, with practically handicraft establishments and isolated initiatives in the various sectors.

This general view has been slightly changed during the last years. The Northeast industrialisation policy, based on the SUDENE incentives system, ( of which the - State of Bahia has recently taken advantage in a special way, by bringing a good deal of the investments made under those incentives, by the creation of an adequate infrastructure) has, in general terms, originated nothing, but new initiatives not connected to each other, which for the time being have not been capable to achieve a radical transformation in the industrial structure, nor to establish a firm basis for a future transformation.

According to data from the IBGE annual survey on industry for 1967, which includes those establishments with a certain volume of productions and that may correspond with those considered as exceeding the merely handicraft level, food industries and those of construction materials have a decisive importance within the Bahian industrial field, but followed more closely by the textile and chemical sectors; the latter showing, however, basically oil industry development and some large project in the oil extraction field. Follow with very little representation those of mechanical, electrical and communications material, pharmaceutical products, perfumes, paper, cardboard and plastics (Table 1.8.2.).

Metallurgy presents a remarkable development, though still far from being considered on an adequate level, and some others which had a considerable growth, such as transportation material or natural rubber, connected to the development of a local market, stay nevertheless, at an incipient level.

Projects approved by SUDENE and put into service during the last years, on which there is no information until 1970, undoubtedly are the most important contributions to the industry of the state, but as has been said they lack real sense of integration, because of which it has not been possible to achieve a greater transformation of the primary industrial structure prevailing in the State.

There are forty three industries in operation until the middle of 1970, created with financial co-operation from this organisation, having also created 8,874 jobs.

Seven firms were created in the non-metallic mineral processing industries sector, with 1,080 jobs, concentrated basically on cement, concrete and ceramics derivatives production.

Of the five metallurgic firms created, with almost one thousand five hundred jobs, three are engaged in ferro-alloys production, thus being a largely developed sector, but with little projection on the industrialization of the State.

Two firms were created within the transportation sector, with 918 people. Only one of these enterprises has a great entity and is presently going through great difficulties caused by the lack of adequate conditions for its development, because of the lack of a real integrated complex to avoid uneconomical transportation of finished parts and products from one side to the other of the country.

In the wood sector, four firms and 822 jobs were created, filling a very important void by including in these new industries one of particle boards and veneers.

The most favoured of all was the chemical sector with nine projects and 1,920 jobs, but a great part of these jobs correspond to an additional development of the vegetal

oil sector, without having created a real basic chemical industry.

Jobs created in other sectors have been quite less important. Only two mechanical firms with 318 employees three for electrical and communications material, with 484 jobs; one for plastic products, with 43 people; one textile with 52; two of dresses and ready made clothes with 352; three for food products, with 225; and two for beverages, with 467 people.

### 1.8.2. GEOGRAPHICAL LOCATION

In respect to geographical distribution of the industry within the State, data on personnel employed in the industry by municipalities included in table 1.8.3. are quite significant as to the importance of Salvador as first industrial center of Bahia as well as to the remarkable position of Feira de Santana, mainly, and Ilheus, Itabuna, Jequié, Juazeiro and Vitoria da Conquista, in particular keeping in mind that more than one half of the population occupied within the industry distributed in the rest of the State is concentrated in the Reconcavo area, near to Salvador.

If, in order to get a more resumed and comprehensive view, we establish as areas of location of industries (and therefore, of its personnel) those of Salvador, Feira de Santana and "Other possible development centers" (this concept includes the municipalities of Ilheus, Itabuna, Jequié, Juazeiro and Vitoria da Conquista) and the "rest of the State", as it is considered in table 1.8.4. in percentage figures, we may see that on the contrary to what could seem at first sight, the importance of industrial employment in the "rest of the State" is continuously increasing, as a consequence of the creation of the Industrial center of Aratú and the growth of the oil refinery, which correspond to the municipalities of Simoes Filho and Maragogipe, in the Reconcavo area. This growth is only surpassed by Feira de Santana, which appears as the most aggressive industrial municipality of all Bahia. On the contrary the relative importance of Salvador as industrial center was continuously reduced until 1960; when it started a recovery in that year until 1965, last year of available data. Evolution of municipalities included in the paragraph "other possible centers of industrial promotion" is quite the most surprising: strong increment from 1940 to 1950, in both absolute and relative terms, stagnation from 1950

to 1960 (brief absolute increase, important percentual decrease); and clear recession between 1960 to 1965.

The conclusion which seems to be deducted from the review of this evolution of industrial employment in Bahia by geographical areas, keeping in mind the appreciations that may be obtained from a direct contact with the industry of the zone and having established the already mentioned strength of Feira de Santana at the start of its industrialization process, is that the largest proliferation of industries has taken place recently in the area of Reconcavo and the zone Alagoinhas and to the North East of the State; in such a way, that the increment of the number of industrial employment in the "rest of the State", is attributable to a small extent only to little changes in the productive structure of other locations in the interior of Bahia.

Naturally, these remarks refer exclusively to the period between 1940 and 1965 from there are estimative data. Subsequently, the tendency to a more intense industrialization of the area of Reconcavo seems to have been confirmed and reinforced. Table 1.8.5. includes the jobs created or those to be created in function of SUDENE action as of 23 September 1970, shows that the Reconcavo area will take 80% of this creation of jobs. The participation of Salvador will be really low, but it will also be low in a point as important as Feira de Santana, not to speak of the "rest of the State" (which includes in this table the "possible centers" of the preceding ones) to which only 11,6% of created or to be created jobs correspond.

The present evolutive trend of geographical distribution of the industrialization process in Bahia, has probably strong sociological roots and perhaps it can be explained as the result of two forces. On one side is the action of public administration that promotes the industry towards the interior of Bahia; on the other side a natural desire of the executives to continue living in Salvador.

The result is a growing belt of industry in the Reconcavo and the Northeast of the State, namely a belt of 50/60 km around Salvador.

Being large industries and planned with a view to markets wider than the local ones, it is obvious that this solution "half way" between the urban congestion and the penetration in the interior is totally convincing. Such is the case of the industrial center of Aratú, so excellently located near the town, near the airport and near Todos os Santos Bay, which affords it the opportunity of having its own port. But aside from these industrial process of higher importance, all seems to indicate that the tendency to concentrate the industry in the area of Reconcavo may result extremely strong, therefore any action directed to expand the industrialization process towards the interior of the State will be welcome, obviously on the basis of an action that "concentrates the dispersion" in a certain number of industrial centers.



### 1.8.3. ANALYSIS BY SECTORS

#### Food, Beverage and Tobacco Industries

The group of industries deriving from agricultural and cattle is (as it was pointed out when reviewing the composition of the census) the industrial sector more widely represented. Considering food, beverage and tobacco industries, in 1960 there were over 2,000 establishments widely distributed all over the State, although the majority were of small size and practically of a craftsmanship nature. The most important establishments covered by IBGE surveys for 1967 were less than four hundred.

Taking this last figure as the more meaningful of the industrial activity, we can find 219 in the food sector, with over 7,000 employees, 120 in the tobacco sector, with over 22,000 employees and 158 in the beverage sector with 1,600 employees.

Among the first we find the Sugar works in respect to their larger size; the number of them has been reduced during the last years as a consequence of the crisis experienced by the sector, which needs an adequate re-structuration toward fully competitive units.

The cereal mills established in Salvador have a certain importance, as they satisfactorily cover the necessities of Bahia.

Also included among the grinding, toasting, and processing of foodstuffs, sub-factor which is the most widely represented, there is a good number of cocoa industries concentrated in the vicinity of Ilheus and Itabuna and is an activity sufficiently developed considering the conditions of cocoa world market which is

subject to strong competition among cocoa growing countries which impairs development of processing in the countries of origin to the desirable extent. However, there is a lack of derivative industries, adequate at least for the necessities of the Brazilian market.

The processing of coffee in the State takes place in small size units, adequate to vocer necessities of the local market. Over 10,000 tons were obtained in 1967.

The alimentary paste and biscuit industry has experienced a considerable growth the last years, fundamentally promoted by the dynamics of the very market.

Other more important establishments are the slaughterhouses, where an integral production process does not take place as it would be desired and have to stand the sometimes unfair competition of those of smaller size, which are less strict with certain legal prescriptions (sanitary and fiscal). Only 2,366 tons of refrigerated cow meat production was recorded in 1967.

The productive lines more weakly represented and in need of a certain stimulation are the dairy and cannery industries for fruits and vegetables, as well as meat and fish, the latter being absent from the industrial field in spite of interesting lasting possibilities from the view point of the market as well as procurement of raw materials.

The beverages sector is more widely developed altogether. The production of alcoholic beverages from sugar may no doubt need a re-structuration parallel to that of the sugar industry altogether, but the installed capacity is sufficient to cover market demand. Only

until recent times could it be justified by virtue of local market development, the development of beer industry among the alcoholic beverages production, taking into account the lack of local raw material for the evolvement of the wine industry. Among the non-alcoholic beverages the degree of development reached by the industry seems to be sufficient to cover local demand, although some thinking should be made towards wider markets for fruit juices, especially tropical fruits, on which some attempts, not quite satisfactory, were made in recent years.

The tobacco industry is the most developed among all those deriving from the agricultural and cattleraising activity. There are productive units in Bahia which meet the requirements of the highest technological level. However, some of the most important companies are going through a situation not free of difficulties as a consequence of organization and handling problems. Once difficulties are overcome, the existing initiatives are no doubt sufficient to guarantee a continued expansion in this sector with large possibilities in view of the abundance and quality of local raw materials.

The Bahian cigarette production in 1967 was over 2,316 million units, or 26% of Brazil; cigars production amounted to more than 57,5 million or 61% of total Brazilian production, and processed tobacco production was over 205,000 tons which was also over one fourth of the country's total production.

#### Textile and ready made clothing industry

Bahian textile industry was represented in the Census of 1960, but a total of over one hundred establishments with 4,300 people employed.

According to IBGE seven years later, in their survey covering only establishments of larger size, the number had increased to 162 with 6,200 people employed.

As for ready made manufactures (including shoe-making) the number of establishments covered by the Census was 617 with 1858 employees. In 1967 there were only 64 of large size, with almost 1,700 employees.

The activity of the textile sector is centered basically on two productive lines, cotton spinning and fabrics, and processing of hard fibers (mainly sisal). The latter being the one that experienced a larger growth during the last years, taking advantage of the boom of these fibers in international markets. However, the most important industries are the cotton spinning mills which were affected in the past by a general crisis, deriving rather from progressive replacement of cotton fabrics by man made and synthetic fibers as well as mixed fibers.

The sisal industry does not go beyond the simple work of primary processing of this fiber for export purposes, and in some cases it does not reach the level of real manufacturing process.

The industry of the ready made articles is centered on the shoe-making sub-sector, as well as ready made clothes of popular type to be absorbed by local markets. The establishments of this type are of a small size in general, and are of a practically craftsmanship nature. This industry is in a primary stage of development which does not even meet the demand of the interior market, in which the industries of Southern Brazil have a firm position due to their adequate manufacturing and commercial organisation.

The main productions of the textile and clothing sector in 1967 were: cotton fabrics 18,868,549 m (for 14,342 thousands of N Cr.) jute fabrics: 2,463,965m (for 1,785 thousands of N Cr), and shirt manufacturing reached 202,099 units (for 883,000 N Cr) which evidences the little development reached since it does not reach but 1,55%, 4,72% and 1,15% respectively of Brazil's production.

### Metal industries

In spite of the availability of abundant mining resources, there is no real basic metal industry sufficiently developed and much less the derivative metal processing industries.

In 1960 the scene of the metal industries was desolating. There were less than 100 industrial establishments, even including those of natural transportation, although not all of them are in the metal field, the number of employees did not reach 2,000.

In 1967, even considering larger establishments only, this group of industries was better represented. The industries of a certain importance reached a similar figure and the number of employees exceeded 2,500.

Basically, among these industries there is a non-ferrous industry engaged in lead production, and two companies of ferroalloys recently established which use mining resources of the State, besides an electric steel mill and foundry. The rest of the basic metallurgy industry is practically non-existent, because there are only foundry and workshops of very rudimentary characteristics.

Among the processing industries, boiler making establishments are the most important, and this is no doubt, one of the most developed metal sectors, there is even an excess of installed capacity in connection with the present market demand.

Important are also some of the existing ship-yards basically engaged in the repairs or construction of small units, this activity is combined with heavy boiler making.

The automobile industry is represented by a chassis making company, which was a recent and unfortunate establishment, since it lacks the adequate industrial framing; there are some body making shops which exception made of the one recently established are nothing but handicraft lumber yards, which have been a complete success in some cases in spite of their rusticity.

Together with this, some highly specialized and recently established companies connected to oil prospecting and market generated by them, are using imported forged parts as raw material.

Factors such as the hardware closely connected to an expanding market such as construction are scarcely represented and do not even cover the barest local necessities. There are some nail factories and one that manufactures hinges.

The same thing happens with the production of equipment goods, even those of simplest technology for which the interior market is sufficient, such as tools and small engines for the agricultural sector mainly.

The production of tools with true industrial characteristics has been started recently.

### Chemical and Petrochemical Industry

Chemical and petrochemical industry in Bahia was basically represented until recent date by the Landulfo Alves oil refinery and a numerous group of establishments engaged in the extraction of vegetable oils. In fact, the 1967 Census showed a total of 57 chemical establishments with 3,497 employees; 14 of medicinal and pharmaceutical products with 90 employees; 124 of perfumes, soap and candlesticks with 403; and 8 of natural rubber, with 110 employees. Among the first ones, the refinery absorbed 1,863 workers and 18 establishments of oil extraction with 1,371 workers. The rest of the establishment classified within the chemical group were handicraft shops, such as the 27 engaged in the fabrication of fireworks materials or the other 11 engaged in the fabrication of various chemicals, same as all the pharmaceutical perfumes and soaps and natural rubber due to little labour used.

In 1967 the scene had changed slightly, since the important enterprises amounted to 150 in total and the number of workers was 7,000. This change was the result of the expansions of the refinery and the establishment of some oil industries of high importance. Aside from these achievements, a certain development of the natural rubber sector could be pointed out, particularly in the field of the rerubberizing of car tyre tubes, as well as fabrication of articles of medical use; a plant was installed which greatly covers the Brazilian market demand and exports to other countries.

A basic chemical industry continued to be non-existent to meet at least the demand of local market, and in order to develop industries of finished chemical

products, as well as pharmaceutical and medicinal or fertilisers and insecticides.

The oil refinery which could be one of the basic links for the industrial development of the State, continued to be an isolated reality.

The chemical production of the state was basically synthesized in that year as follows:

Oil derivatives

- Liquefied gas	156953 m <sup>3</sup>
- Gasoline (cars)	950849 "
- Gas oil	558485 "
- Diesel oil	624504 "
- Kerosene	227787 "
- Asphalt	36837 "
- Paraffin	133 "
- Propane	1375 "
- Solvents	6468 "
- Others	557 "

Oils

- Cocoa butter	22237 Tm.
- Dendé oil	9726 "
- Spurge oil	22997 "

Other products

- Base glycerine	27 Tm.
- Compound fertilisers	623 "
- Soaps	11080 "
- Recapped tyres	65318 "

More recently the scene has changed considerably. Together with the start-up of several chemical projects which guarantee at least a series of basic productions which appear excellent prospects for the development of



a petrochemical industry taking advantage of the opportunities offered by local oil resources. Presently there are 13 petrochemical projects in phase of construction or operation, as well as another 12 which are being reviewed by the responsible organizations in order to obtain financing.

If efforts are intensified in this sector, the scene will be entirely different within a few years, the more traditional sub-sector such as oil and soap manufacture will have to start re-structuring, taking into account the excess of existing capacity in the first one and rudimentary characteristics of the second. A concentration and re-location of these establishments would have to be made.

It is also possible that certain lines of chemicals can be developed for consumption or support to agriculture based on possibilities of petrochemistry as well as on progressive growth of the Bahian market.

It is more difficult to think of an additional development of a base chemical industry unless adequate resources are searched and found.

#### Non-Metallic Ore Mineral Processing Industries;

As it happens within all primary industrial structure this is a widely represented sector. When commenting the 1960 Census it was pointed out that it was the sector employing a larger number of people (8,525), after the food industries with a high number of establishments (1,894) and of a very small size.

The activities of industries engaged in tiles for roofs, bricks and terra-cotta tiles manufacture

which amount to 1,533 with 5,442 people could be particularly considered as of a handicraft nature.

In 1967, however, the number of establishments of major importance amounted to 259 with 6,000 employed people, thus evidencing an unquestionable development of the Sector, which has increased in the last years as a consequence of the boom of the construction activity by reason of the plans of infrastructure and housing. The existing cement industry has been increasing slowly, eliminating the bottlenecks experienced by market. This allowed the manufacture of derivative products which practically cover a large variety of products.

Only the glass making industry is exclusively absent, as well as sanitary ware. On the other hand, the ceramics and tile manufacture has been widely developed, thus resuming an old Bahian production.

The following figures are indicative of the basic production of the sector in 1967:

- Quick lime	39,677 Tons
- Hydrated lime	32,671 "
- Portland cement	184,553 "
- Asbestos-cement plates	466,611 m <sup>2</sup>
- Ceramic tiles	25,735 m <sup>2</sup>
- Tiles	94,437 m <sup>2</sup>
- Glazed ware	250 units
- Clay roof tiles	11,394 thousands/units
- Cement bricks	610 " "

These quantities ranging between 4 and 9% of the total Brazilian production, cover the major necessities of Bahia.

### Other industries

Other industries to be mentioned within the industrial scene of Bahia are the lumber, furniture and tanning industries. The rest of them, aside from Graphic Arts of a merely local value have no meaning whatsoever.

The lumber industry which was represented in the Census of 1960 by a total of 200 establishments with more than 1,700 people, has not achieved a development in accordance with the resources of the State in spite of these figures. It is basically an industry in primary transformation. It is true that it has experienced a growth, for in 1967 the more important establishments were 126 with more than 2000 people employed. Particle boards and fine wood processing industries have been created recently, as said, but the basic lumber activity is limited to sawing, connected to forestry operations.

The furniture making industry has a merely local projection. It covers carpentry shops, handicraft shops or custom type furniture shops, more connected to existing market than to the use of local raw material.

The number of furniture making industries in 1960 amounted to more than 500 with nearly 2,000 employees, which implies a size of less than 4 workers per establishment. The most important 93 industries employ 5,000 workers, they also do not show a much larger size.

The leather and furs industry represented by 300 industries and 1,600 workers in 1960, also a size of almost handicraft nature. In 1967 the most important establishments were only 31 with 800 workers; same as in the lumber sector its development is inadequate to the resources of the State. There is an abundant

export of untanned leathers and furs, and the Bahian tanning industry is centered basically in the first transformation. There are practically no finishing shops, nor any for the manufacture of final leather products, excepting footwear, which as mentioned is of a handicraft nature. In general the sector lacks an adequate technology.

Tanned leathers do not meet in all cases the quality requirements necessary.

#### 1.8.4. DEVELOPMENT PROSPECTS

The most immediate prospects for the integral industrial development of Bahia, taking into account the characteristics of existing industry with its lack of interconnection and incipient level of development in almost all sector must be found in the utilization of all those natural resources which can be exploited in the most immediate manner.

There are, no doubt, oil and mining resources in general, since for agricultural and cattle resources a previous development of the sector is required.

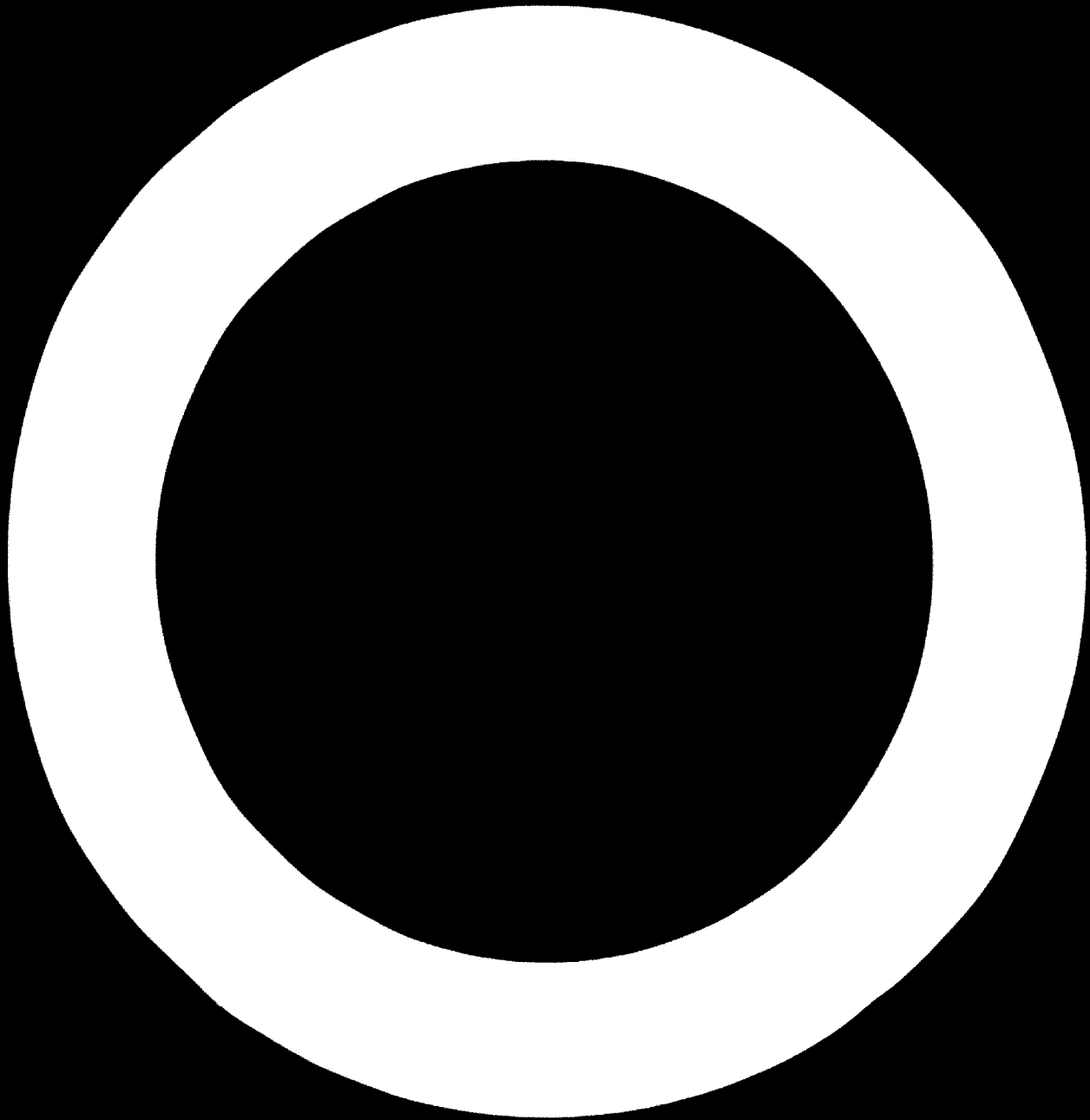
The petrochemical field could be therefore as shown by the numerous existing projects, one of the pillars of the Bahia industrial development.

The other field is basic metallurgy. The first place of the minerals to be exploited is taken by copper.

Together with these basic sectors, a re-structuration of some traditional industries has to be made, and which have reached an unquestionable level of development, but are showed or even forced into recessive situations due to their own inadequate structure at present. This, fundamentally, is the case of tobacco, sugar and vegetable oils, and up to a certain extent the cotton textile industry, for which a modernization is imperative in order to conform to new market trends.

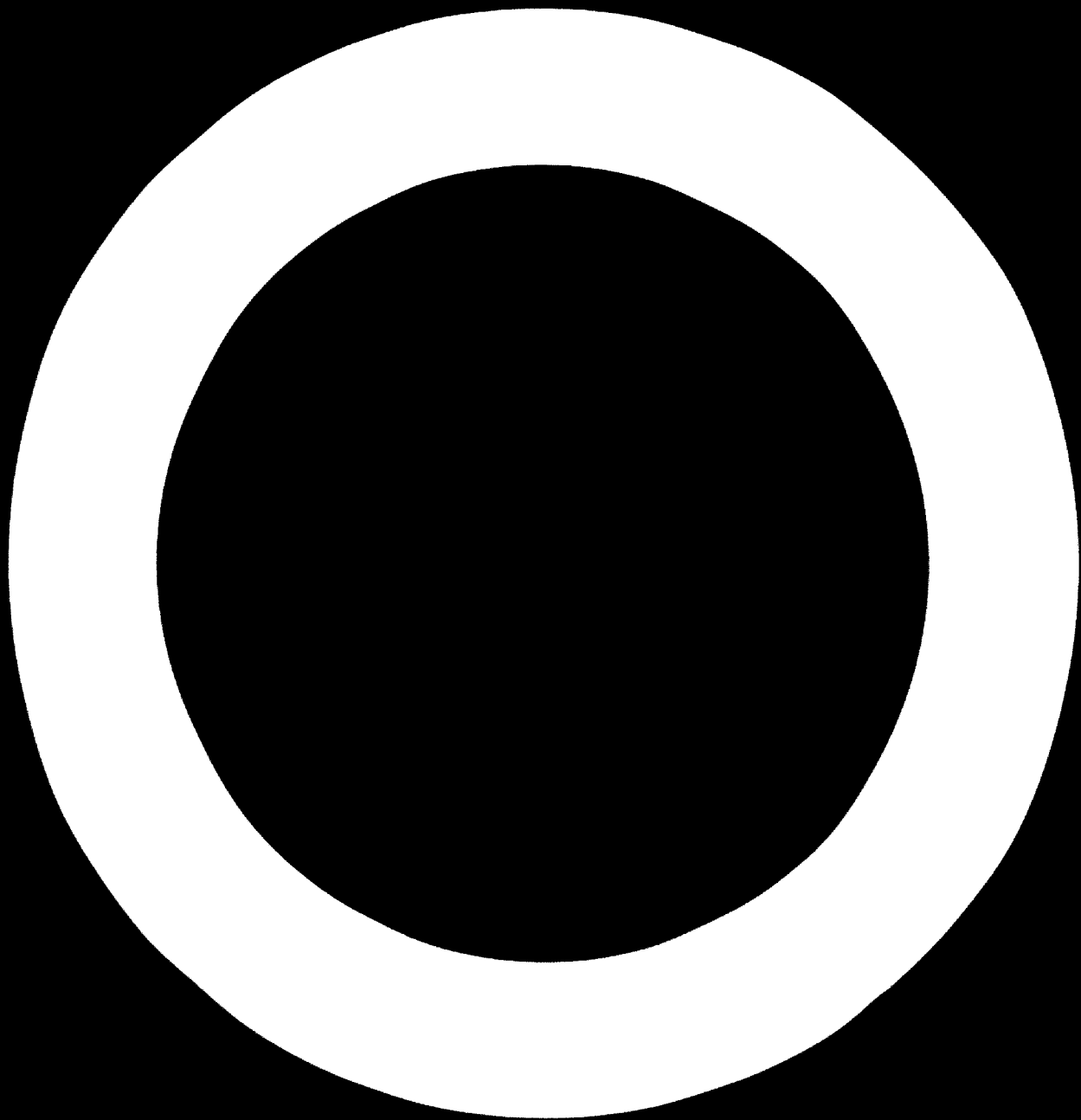
If it is also desired to create a genuine industrial climate and extend the industrialization to the various geographical environments of the State, the existing industrial picture should be completed looking for new opportunities, both in function of the market and of the resources, or looking for an industrial interconnection which does not exist today, as intended by the present project.

**SECOND PART : POSSIBILITIES FOR SETTING UP  
NEW INDUSTRIES INSIDE THE  
STATE**



**2.1. INTRODUCTION**





2.1. INTRODUCTION

With both the conditional factors of development and the industrial production structures existing in Bahia having been analysed, it now behoves us to begin the investigation of the possibilities for industrializing the interior of the said State. This work, however, requires as a first step in its completion the adopting of some sort of development strategy which may constitute the guiding rule in the selection of the actions whose subsequent examining is to be recommended. The general lines of the -- strategies to be adopted in the specific case of this project are clearly indicated, in other respects, in point 1.03 of the technical specification of the contract -- which establishes the following criteria as a basis for the selection of industries:

- a) The using of the area's natural resources which at the present moment are not being used to the full, whether the said resources are mining farming or forestry resources.
- b) The utilising of the opportunities that, as regards auxiliary or subsidiary industries, may be represented by petroleum and petrochemical developments in operation and being planned; as well as those derived from the plants already set up, or to be set up, in the Industrial Center of Aratú.
- c) The using of the possibilities offered by the industrial market of the South of Brazil for the -- production and marketing by Bahian firms of intermediate industrial goods whose present supply is inadequate for the needs and demands of the large Brazilian final industry.

These contractual prescriptions have certainly been a great help for the orientation of the team of experts' enquiries which have been carried out both by the direct interviewing of businessmen and the examining of the data previously obtained in the "Programa de Industrializaçao do Interior" polls from various industries in the interior of the State. Nevertheless, as was to be expected, the enquiries made in accordance with this initial orientation have brought to light new facets and partial aspects of obvious significance for the industrial development of -- the interior of the State of Bahia (on facilitating greater knowledge of the economic structure of the Country in general and the area investigated in particular), with -- the obtaining of the subsequent possibility of reinforcing and specifying the strategic bases for selecting industries.

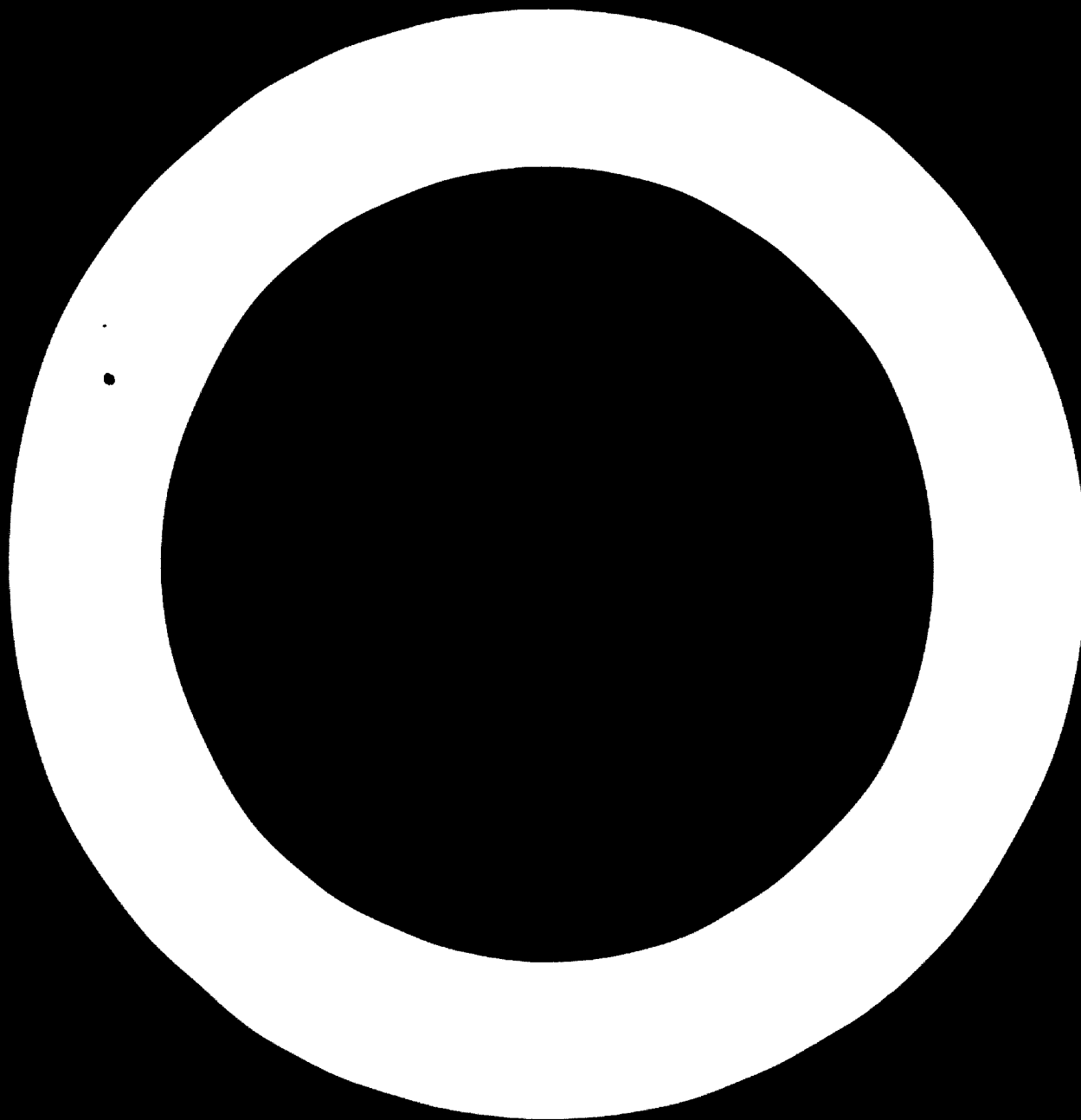
In fact, this interaction between the making of theoretic development models for firms in the interior and -- the obtaining of new real data, through contact with the actual Bahian industry, has been successively repeated -- throughout the survey, thus allowing a gradual purifying of the investigation carried out.

However, in order to avoid any possible deviation -- from the facts in the partial analyses made, working meetings were periodically held with the Project Manager of U.N.I.D.O. and with the Secretary of Industry and Commerce of the State of Bahia and his immediate collaborators. In practice, these meetings have, without any doubt at -- all, been one of the most useful and positive aspects of the methodology adopted, since, apart from having facilitated adequate information on the progress of the work, they have also made the exchange of ideas and the interaction of efforts possible.

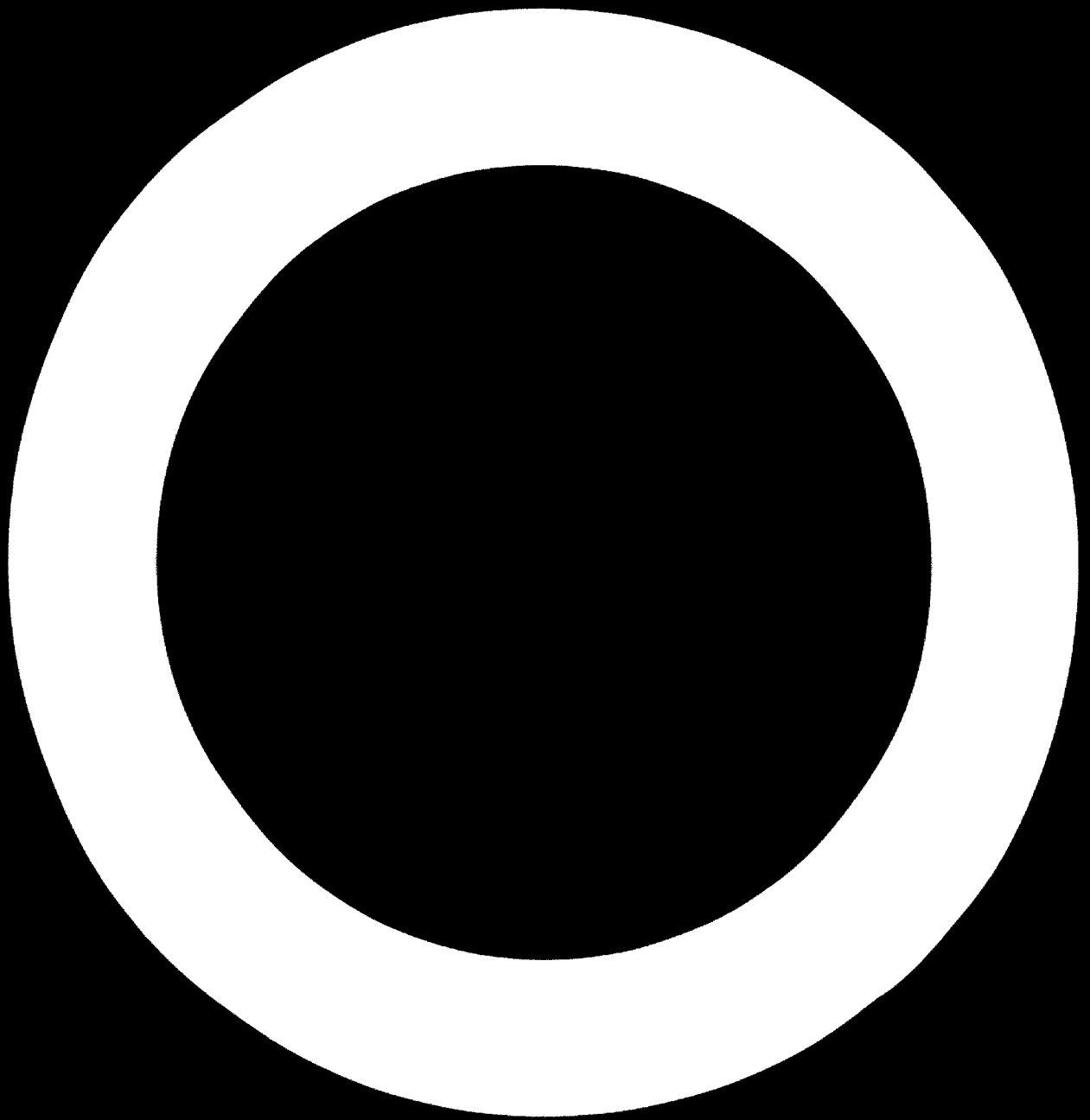
Naturally, the text in which the results of a work are presented cannot be based on a purely historical exhibitionist order, because that would probably be misleading or, at least, tiring for the reader, more especially when the analysis, as in the case of this survey, has been in practice developed in a cycle form through repeated examination, in growing profundity, of an identical theme. However, it would also be misleading and uneasy to present the final results in the text without bearing witness to the basic analysis made for achieving them. Therefore, -- whilst taking an intermediate position, the results obtained will be shown hereunder in accordance with the main logical stages of the survey carried out, which are as follows:

1. The setting up of basic strategies for development, as regards the preselection of productive lines whose encouragement may be considered.
2. Preselection of productive lines with possible development in the area.
3. Specifying of the methodology for specific investigation of the preselected lines.
4. Investigation of the preselected production lines; review of selective strategies and criteria; and final selection of the lines to be produced for those which are considered convenient for recommending as regards the subsequent carrying out of surveys for implementing them.

The detailed examination of each of these four basic investigation stages is done as follows.



**2.2. BASIC STRATEGIES FOR THE INDUSTRIAL  
DEVELOPMENT OF BAHIA**



## 2.2. BASIC STRATEGIES FOR THE INDUSTRIAL DEVELOPMENT OF BAHIA

Every regional development process promoted by means of economic policy actions is, compulsorily, a corrective task for the tendencies which can be observed in the economy of the said area; these are tendencies whose effects are considered as being not very adequate or which show, in an overall way, prospects of leading to unsatisfactory situations over a more or less long term.

Naturally, the strategies of this regional action have to be laid down in relation to the economical dynamics whose modification is being considered. These dynamics -- should therefore be analysed and evaluated with regard to their present or future results and described in connection with their fundamental components. Only in this way, whilst being aware of the general aims to be reached, is it possible to ascertain the aims and means of the regional policy to be taken up.

The purposes of the industrialization policy for the interior of the State of Bahia were described in the introduction to this survey, just as was done in the technical specifications of the project. So also were the human resources, the substructures, the services and the industrial production of the State of Bahia examined in the First Part of this survey. It only remains, therefore, to proceed to an analysis, even though it may be superficial, of the general nature of the present economic dynamics of Brazil, which obviously constitute the ultimate condition of greatest importance for the present development prospects of Bahian industry.



### 2.2.1. MAIN CHARACTERISTICS OF THE BRAZILIAN ECONOMY

With no more pretension than that of an elementary examination of the most outstanding aspects, we may begin, then, by analysing some of the basic traits of the present economic structure of Brazil.

With an area of 8.5 million Km<sup>2</sup>, Brazil stretches -- from the North parallel 5°16'19" to the South parallel 33°45'09", and from this immense territory, the following large natural regions can be described:

- . The tropical basin of the Amazon
- . The "mato" or high lands of the interior
- . The "sertao" or wide, semi-desert like strip in -- the N.E.
- . The tropical humid coastal strip in the N.E.
- . The coast-hugging subtropical strip in the South, between the river Paraná and the Coast.

#### Population

The population of Brazil (tables 2.2.1. to 2.2.3) -- has risen from 9.9 million inhabitants in the first census in 1872 to 71 million in 1960. The estimated population for 1970 (the census results and their analysis and presentation have not yet been worked out) is 95.3 million, and it is expected to reach 100 million by 1972, since -- the present rate of growth in the country is 3% per year, one of the highest in the world.

This population, which has evolved so quickly, has found sufficient vital space for settling and there still exists as a reserve the big demographic vacuum in the -- North and Mid-West, areas which are 63% of the country's surface area and which only take up 8.9% of the population of Brazil.

However, there exist areas whose demographic growth is slower than that of the rest of the country. Such is the case of the North-East whose natural characteristics, so oft mentioned, provoke emigration-to-the-South phenomena as compared to a high birth rate. All together, this area had 4.64 million inhabitants in 1872 which represented 46.7% of the population, of Brazil, whilst in the -- 1960 census the population, which was 22.4 million, was only 31.6% of the total.

Up to 1920, the solution to the problem of settling a population on the increase was found, almost exclusively, in the cultivation of new land or in the advancing of the cattle raising frontiers, so that, in 1920, the population of the big cities (Belem, Fortaleza, Recife, Salvador, Rio, Sao Paulo, Curitiba, Porto Alegre and Bello Horizonte to which later was added the federal capital, Brasilia) only represented 9.4% of that of the whole country, which is a proportion that showed a modest increase over the percentage that the same population showed with regard to the country's total in the first census of 1872, which was 7.15%. Later, when industrialization began, these tendencies were noticeably changed, so that in 1970 the population of these large cities is estimated at 18 million, equivalent to 19% of the total population of Brazil. However, this must not be interpreted in the sense that there exists a big exodus from the land, because movement en masse from the land to the industries has still not come about in Brazil.

#### The first sector

Agricultural and cattle production (tables 2.2.4 to 2.2.11) in principle reasonably ensures the feeding of -- this growing population, and no serious preoccupation on

the matter exists for the near future, although the observations to be made later on the distribution of income -- and low purchasing power of a great part of the population must be borne in mind. It is true that the specific problem of the limited wheat production is raised, which production is concentrated, because of the tropical and subtropical climate, in the extreme South of the country -- (Rio Grande do Sul), where wheat is obtained for covering only a part of the small per se consumption of the country. The cheapness of this domestic production, closely linked to the subject of foreign trade, is a subject -- which is very difficult to analyse, and is completely outside the objects of the present survey. In any event, the present government policy is to increase the wheat production and reduce the imports.

Other ceareal growing (essentially rice - 6,600,000 metric tons - and maize, 12,800,000 metric tons, whereas the situation of oats, barley and rye is, like wheat, deficient) contributes to the covering of this food gap of a low wheat consumption. But basically, as in other tropical areas, tapioca is the basic substitute for wheat. Tapioca production is 29,200,000 metric tons, which represents a "per capita" production of 850 grammes a day.

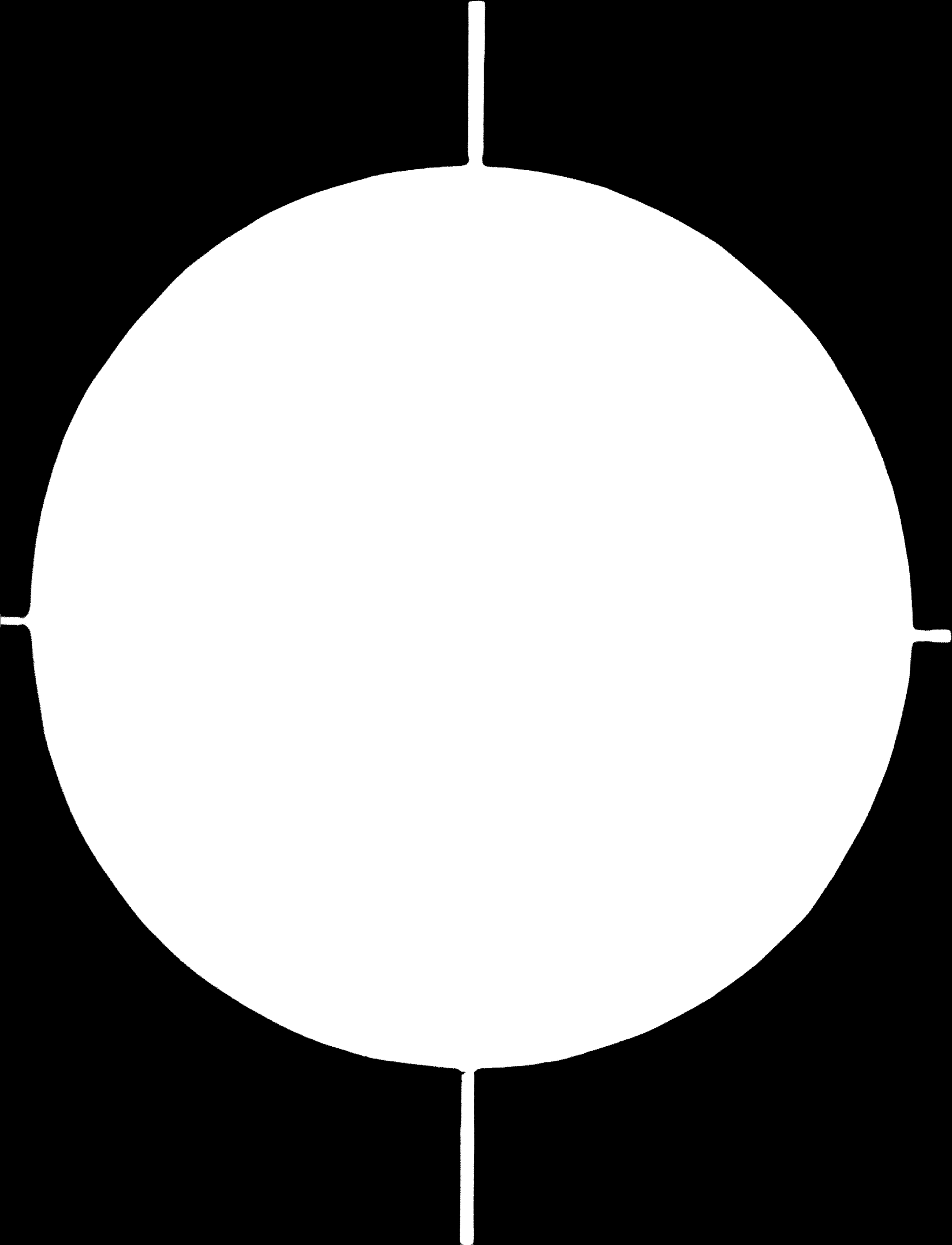
Other important products for the interior food consumption, according to 1968 data, are kidney beans (2,400,000 metric tons) from amongst non-green vegetables; the sweet potato and the yam from amongst the tuber plants; onion, tomato, garlic and all the wide range of tropical fruits whose total production possibilities (for domestic consumption and for export) are still not being taken up, mainly through a lack of an adequate preserving and transforming industry.

Reference to the typical export crops has been left to the last: Coffee, (a very variable production, between

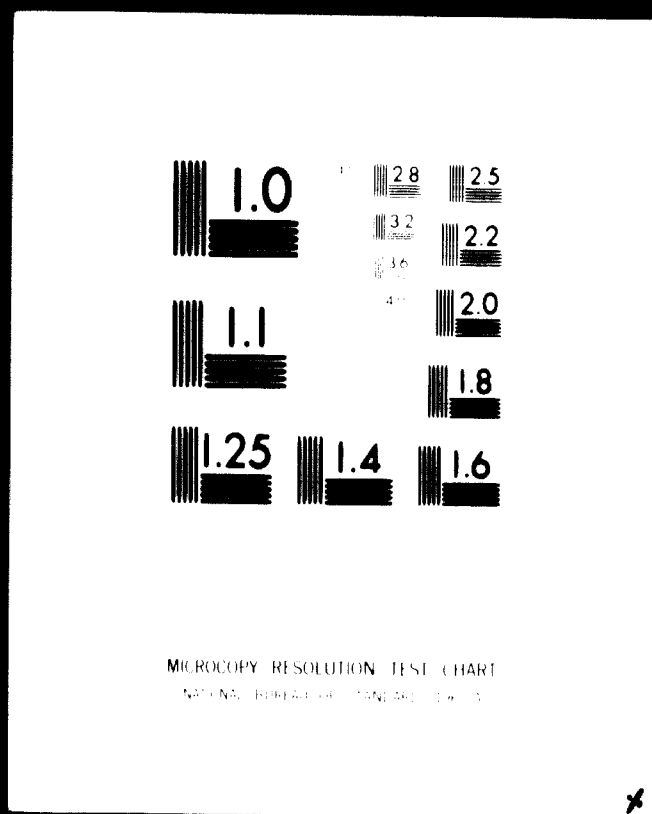
**G - 560**



**81.08.24**



3 OF 7  
02510



24 x  
D

20 and 40 million bags), Cocoa (150,000 to 190,000 metric tons) and sugar cane (around 76 million metric tons) -- amongst food crops; Sisal hemp (around 330,000 Tm); Tobacco (258,000 Tm); Cotton (almost 2,000,000 Tm production, but now without the prominence it had before the 1930 crisis) and other textiles and oil producers from amongst industrial crops.

A total of 92 million head of cattle and about 65 million pigs is a basic reserve of food, together with 39 million head of sheep and goats, and some 285 million poultry (turkeys, hens, etc.). Meat production runs in excess, and therefore there is a nett export balance. Egg production is close on 9 dozen per inhabitant per year. Milk production (only 7,000 million litres) is insufficient, as a result of the biological characteristics of the indo-Brazilian cattle, and this makes it necessary to import big shipments of powdered milk.

Fishing, with a figure of 414 million Kgs. caught, and 71 million crustaceans in 1968 could, without doubt, be increased if both the fishing fleet and the marketing were to be improved and, even further, if the preserving industry were to be encouraged. With regard to hunting, wild mammal and reptile skins are obtained on a large scale.

The big forestry reserves nowadays bring total self sufficiency in timber, with a positive export balance, and as regards quality, it is important to emphasise the fine tropical timbers. A fact that is likewise worth pointing out with reference to the usefulness of the forestry reserves is the big production of charcoal, nearing one million tons, which is an inevitable result of the lack in Brazil of fuels.

Extractive Industries

Indeed, Brazil has a relatively low (5 million Tm.) production of mineral coal and her present oil operations, with a production of 9.5 million cubic metres, in 1968 -- scarcely covered 40% of the country's needs. Refining is definitely oriented towards obtaining domestic petroleum and fuel-oil in order to meet the problem of the lack of fuels.

In closing the cycle of the analysis of the extraction industry, we must refer to the big reserves (many of them not yet evaluated) of hematite and ores of copper, lead, manganese, antimony, barium, etc., the exploitation of the greater part of which has not yet reached full development in relation, at times, to economic interests so somewhat remote from those of the country itself. Exception must be made as regards iron ore since hematite exports (15 million Tm. from a total of 25 million Tm. produced) in 1968 exceeded in value (104 million U.S. \$) even -- foreign sales of such tradition as cocoa, and were only surpassed by cotton, sugar and, of course, coffee exports.

Processing Industries

Brazilian industrialization was begun in practice in the decade of the 1940s, in relation with the good opportunity created by the second world war and post-war period for self supplying of manufactured goods in countries -- with a low industrial development.

The Brazilian process industry grew centred in the -- triangle of Sao Paulo - Rio - Belo Horizonte. In fact, in 1965, 67.2% of industrial employment in Brazil - (only processing industries, excluding building and extracting



industries) - was concentrated in the States of Sao Paulo, Guanabara and Rio. The percentage was even higher in certain key sectors: 92.4% for the mechanical engineering industry; 92.9% for the electric material and communications industry; 95.1% for transport equipment industry; 95.2% for the cork process industry; 76% for the chemical industry; 99.7% for the pharmaceutical industry; 79.2% -- for the perfumery industry; 95.3% for the plastic materials industry; 70.9% for the publishing industry; 73.7% -- for the property industry; 72.9% for the furnishing industry; 73.7 for miscellaneous industries. If production were measured in sales figures, perhaps more than 80% of -- Brazilian industrial production is concentrated in the -- triangle Rio - Sao Paulo - Bello Horizonte. The fundamental vertex of this triangle is, however, Sao Paulo, which absorbs almost 52% of the industrial population of the country just on its own.

We are faced then - and this is the important thing - with an integrated industrial area, whose industrial dimensions are, in addition, reaching levels of competitiveness on an international scale, both in the final industry stage, and in the auxiliary and subsidiary industry. There even exist symptoms of oversize in certain lines of production with an average added value that, situated in -- this industrial triangle in the South, seem to have adopted production figures per plant that are higher than those desirable, without yet beginning a decentralizing process which would reduce unnecessary costs both as regards transport and especially, bureaucratic ones.

Other average type sectors that are not so specifically linked to the Rio-Sao Paulo-Bello Horizonte triangle, have also been attracted by the Southern States, mainly by Rio Grande. Such is the case with the food, skin and leather and textile industries.

The Distribution of the Domestic Product and the Working Population

The considerations carried out in relation to the -- primary and secondary sectors of the Brazilian economy -- sufficiently frame the role remaining to be played by the service sector, adequate at first in its development in -- the industrial zone of the south and even in the great -- concentration of people in the rest of the country, but insufficient in the rural areas; competitive in banks, -- transport and insurance, on a small scale in the wholesa- le and retail trade, especially in the food business; strongly developed, in conclusion, in the public services subsector.

A significant detail that may give a clear idea of -- the relative importance of the service sector and of the other two production sectors is that of the percentage -- distribution of the nett domestic product at the cost of the factors of whose development the following table esti- mated by the Getulio Vargas foundation bears exact witness.

<u>Sectors</u>	<u>1949</u>	<u>1959</u>	<u>1969</u>
Primary	26.4%	21.1%	18.0%
Secondary	23.2%	29.5%	31.4%
Third	50.4%	49.4%	50.6%

The considerable importance of the services, together with the advance made by the industrial sector, are cer- tainly made patent in this table.

With regard to the distribution of the working popu- lation according to sectors, data obtained by the experts of the International Bank for Reconstruction and Develop- ment in their report "Economic Growth of Brazil, Problems and Prospects" give as a result the following distribution of the working population of Brazil in 1960:

The total value of the Brazilian processing industry's production was, in 1968, 58.858 million cruzeiros. But even more than the quantitative data on Brazilian industrial production (the main ones being shown in tables 2.2.12 to 2.2.14) perhaps it is more important to show -- the qualitative aspects of the productive structure of -- the secondary sector in the country: strong protectionism that has made development possible but that may prevent the attaining of an authentic competitiveness; a beneficial concentration which is already pointing towards the appearance of one of the biggest industrial zones in the world, but which threatens to have a tendency to become intensified, thus taking away possibilities from other areas, and giving rise to superpopulation problems in a country in which what really is in excess is space; export possibilities and possibilities for industrial -- growth with a view to the domestic market, together with more and more profound inequality in the space distribution of income; a trend in conclusion, towards the reduction of production costs and an increase - above all on a countrywide level - of transport and distribution costs, by reason of not so much the enormous distances, not always justifiable, but of the type of products transported.

The structure of the Brazilian processing industry is then, at one and the same time, healthy and defective. If it were not concentrated, it would lack possibilities for the future, but this very concentration gives rise to serious problems of economic policy. Overall, this situation should be interpreted along the lines that the critical point for a decentralizing industrial policy is not very far away once a market like Brazil, with almost 100 million inhabitants and 8.5 million Km<sup>2</sup> abundantly justifies the existence of more than one industrial area, especially for production lines in which geographical decentralization may become imperative.

<u>Sector</u>	<u>Working population</u>	<u>%</u>
Primary	12,271,200	54.0
Secondary	2,855,000	13.9
Third	7,525,000	32.1
	<u>22,651,200</u>	<u>100.0</u>

This same mission from the IBRD estimated the working population of Brazil in 1965 to be between 27,370,000 and 28,310,000 people, without giving any distribution by sectors.

Possibly the most significant problem, however, is that of the inequality in the distribution of the working population by regions. According to data from the IBRD itself, in 1960 the Southern region had a working population of 8,205,600, equivalent to 33.6% of the total population of the zone, with 14,445,600 people in a working position for the rest of the country. Now, if we adopt -- the supposition that the population of the Third sector is uniformly spread, with the working population, according to geographical areas, and if we accept, in accordance with what is expounded in the section on the transformation Industry, that 75% of the industrial labour force is to be found, in fact, in the South, the following estimation of geographic and sector distribution of the working population (in millions of people) could be made:

<u>Sector</u>	<u>South</u>	<u>Rest of Country</u>	<u>Total</u>
Primary	3.2	9.1	12.3
Secondary	2.2	0.7	2.9
Third	<u>2.8</u>	<u>4.7</u>	<u>7.</u>
Total	8.2	14.5	22.7

Even if they are not perfect, the foregoing figures permit serious income distribution problems to be glimpsed which will be analysed later.

The Foreign Sector

The characteristics of the Brazilian foreign sector are, to a large extent, determined by the structural production and resource conditions previously analysed. Thus Brazil is a wheat importer whilst it exports tropical -- agricultural products. It imports fuels and chemical and industrial products, but at the same time it is beginning to export manufactured articles which will represent in 1970 approximately 16% of the total value exported.\*

In 1968 a total of 10 products ensured 76.6% in value of the exports with coffee by itself representing -- 42.4% thereof, which is a low percentage if it is compared with that of previous times in which this product came to represent 75% (and normally 60 and 65%) of the total of Brazil's exports. The effort to diversify has led, then, to positive results, and it has meant, in addition, an increase in the turnover of exchanges: from 1741 million -- U.S. \$ exported in 1966 to 1881 million in 1968 and about 2,500 million U.S. \$ (forecast) in 1970.

However, despite the efforts made, the concentration of the bulk of exports in a very small number of items is excessive. The exports of raw cotton, sugar and hematite represented, all together, a value higher than 340 million U.S. \$, whilst cocoa, with 72.2 million U.S. \$, wood, -- with 71.9 million U.S. \$, maize, with 57 million U.S. \$, vegetable oils, with 42.5 million U.S. \$, animal fodder, with 38.5 million U.S. \$ and rice, with 21.2 million U.S. \$, completed, in value, 76.6% of the total of exports mentioned earlier. (Tables 2.2.15 and 2.2.16).

Imports also show a structure which is not very much

\* VISAO, 7.XI.70

diversified. Petroleum and wheat were respectively 199.5 and 182.6 million U.S. \$ amounting together, 17.9% of the total imports. More significant, as regards development, is the figure for imports of machinery and equipment, -- 659.4 million U.S. \$ which represents 39.3% of imports. Another two large overall items, chemical products, with 323.9 million U.S. \$ and metals with 181.6 million, seem rather to obey defects which can be eliminated from the present Brazilian production system than problems inherent to the natural conditions of the country.

The result, generally positive, of the trade balance over the last few years has normally been abundantly absorbed by the deficits of the balance of services, with which the total of ordinary transactions has been showing a result in red. The balance of capital has not always compensated this disequilibrium (Table 2.2.17).

#### Public sector

In the opinion of the experts from the "International Bank for Reconstruction and Development" in their report "Economic Growth of Brazil: Problems and Prospects", the Brazilian tax system is characterized by the strong amount of taxes existing and their regressive effect as regards their incidence in the general economic system.

The first idea is confirmed by the estimation made by the IBRD experts that approximately 30% of the GNP of Brazil in 1966 was absorbed by taxes. In contrast to this opinion, the Getulio Vargas Foundation estimated the gross tax pressure for that same year at 24.4% and bearing in mind that transfers and subsidies that same year were --

equivalent to 6% of the GNP, the said Foundation evaluated the nett tax pressure at 16.4%, which figure dropped in 1967 to 13.2% of Brazil's GNP.

In both cases, the data refers to the total public income in the three Government spheres: federal, state -- and municipal which absorbed, in round figures, 57%, 33% and 10% respectively of public income and expenditure. The existence of these three simultaneous tax spheres may be the reason for the quantitative differences in the opinions of the IBRD experts and of the Getulio Vargas Foundation.

The opinion of the International Bank's report seems less disputable with regard to the regressive nature of Brazil's tax system, since it is based on the preponderance of the indirect tax regimen (practically unavoidable in a country still not fully developed), on the insensitivity of the tax scales to the nature of the goods consumed and on the fact that the systems to encourage investment in depressed areas (North-East) or areas to be developed (Amazon, etc.) are based on exemptions from direct taxation of individuals and companies.

Overall, it seems that there exist sufficient reasons for accepting the thesis of Brazil's fiscal regressiveness, a particularly serious fact in a country with large inequalities of income.

The International Bank's experts considered, however, that on a short term basis, it would be difficult to remove this regressive nature of the Brazilian tax system, it being urgent, on the other hand, to try and reduce the total volume of public spending and begin, through this procedure, the rearranging of the Brazilian Public Sector. This opinion certainly seems sensible.

Some significant data referring to taxation in Brazil has been brought together in tables 2.2.18 to 2.2.21 of the Appendix.

### Money and prices

However brief this review of the main structural aspects of the Brazilian economy has to be, it is unavoidable to refer to the rate of inflation with which it seems the country has learned to live and which, after having reached proportions of more than 90% per year, is nowadays thought to have been dominated despite annual increases in prices of the order of 20% and 25%.

According to the magazine "Cojuntura Económica" (Economic Situation) 7/19 January, 1971), the price indexes in the period 1959-1969 developed in the following manner:

<u>Year</u>	<u>General Index</u>	<u>Wholesale prices</u>	<u>Cost of living</u>
1959	100	100	100
1960	129	131	129
1961	177	184	172
1962	268	277	261
1963	471	488	446
1964	897	884	853
1965	1,407	1,359	1,416
1966	1,942	1,913	2,000
1967	2,491	2,421	2,608
1968	3,097	2,981	3,183
1969	3,727	3,548	3,904



The annual increases in prices from 1960 to now were as indicated below:

<u>Year</u>	<u>% change per year in the general price index.</u>
1960	29.1
1961	37.0
1962	51.7
1963	75.7
1964	90.5
1965	56.8
1966	38.0
1967	28.2
1968	24.3
1969	20.3
1970 (forecast)	25.0

Naturally, inflation on this scale has given rise to an endless run of problems of a practical order in commercial transactions, which problems, from the point of view of using currency as an instalment account unit, have been resolved with obvious ingenuity. Commercial promissory notes, and in general all business transactions in instalments are submitted, by definition, to the so called "corrector coefficients" in accordance with which, when accepting to pay a certain amount, the person signing the promissory note commits himself to paying at "n" days sight, the amount that, in proportion to the corrector coefficients to be established, the sum accepted today will be worth at that time in the future.

Even more subtle, if it were possible, is the systematic devaluation system, in moderate percentages, which make the cruzeiro change its parity with the dollar, without prior warning, by 1, 1.5 or 2% every 30/60 days, without provoking the slightest feeling of alarm.

However, another aspect of the problem worth mentioning is that of the effects that this inflation may have on economic production processes and distribution of income.

Obviously, a permanent inflation system is also a -- system of permanent counterdistribution. It is not easy to be precise about which direction or directions the real transfers of purchasing power take place in that inflation cannot help but provoke. There are O.I.T. surveys -- which indicate that the real purchasing power of the industrial salaries in Brazil has increased at a rate of -- 3.5% per year from 1960 to 1968. The Minister of Economy, commenting on this detail in a recent interview with -- "VISAO"<sup>x</sup>, stated: "I do not hesitate to affirm that the wages of the rural population have grown in accordance -- with this same percentage".

Besides this (a phenomenon directly related to inflation), an increase in the rate of interest can be seen in Brazil, and especially the discount rates applicable for "prompt payment", i.e. in cash down payments, facts which frequently give rise to difficulties for the small firm owner in obtaining fixed and floating capital.

#### General rate of growth

The overall rate of growth of the Brazilian economy in real terms may be established at around an accumulative annual 5.6%. This high rate of growth of the GNP enables that even with an increase in population which has been 2.6% per year, the GNP "per capita" is growing at the rate of 3%.

The development of the GNP and the GNP "per capita" at constant prices in the period 1949-1969 was as follows

\* VISAO 7.XI.70

(data from the Getulio Vargas Foundation):

<u>Years</u>	<u>GNP Index</u>	<u>GNP index per capita</u>
1949	100	100
1953	125.7	112.6
1956	152.6	125.2
1959	187.5	140.8
1963	242.5	160.8
1964	249.6.	160.4
1965	256.4	251.8
1966	269.5	162.7
1967	282.4	165.2
1968	306.1	173.4
1969	333.6	182.1

The present level of the GNP per inhabitant is calculated at about 350 U.S.\$

It seems worth relating the country's overall growth with the rate of investment, for the purposes of which it may be expressive to compare the GNP with the gross formation of fixed capital. The results, also from the Getulio Vargas Foundation, are as follows:

<u>Years</u>	<u>Figures in millions of ordinary cruzeiros</u>		
	<u>GNP</u>	<u>FBCF</u>	<u>%</u>
1960	2,755	467	16.8
1961	4,052	697	17.3
1962	6,601	1,181	17.8
1963	11,928	2,099	17.6
1964	23,055	3,804	16.6
1965	36,818	5,404	14.7
1966	53,724	8,199	15.3
1967	71,485	10,324	14.4
1968	99,270	16,512	16.6

The figures have not been deflected since the most interesting value is the percentage between the formation of capital and the GNP.

### Problems of Distribution

The final significant fact is that the Brazilian economy has for some years been undergoing a satisfactory -- growth. However, an additional problem to be raised is -- that referring to the way in which the said growth is taking place, especially with reference to the distribution of space, sectors and personnel of earned income.

In relation to this latter facet of the question, -- there nevertheless exist quite clear symptoms that the results of economic growth are not entirely satisfactory.

Considering, in the first place, the personal distribution of income (data from CEPAL (1)) it has been possible to come to the following estimation of the distribution of the present population according to GNP "per capita" levels:

<u>Economic class</u>	<u>GNP/Inhab.</u> (in US \$)	<u>Millions of people</u>	<u>Total GNP</u> (Millions US \$)
Upper	2,170	4.8	10.3
Middle	582	19.1	11.3
Lower	163	71.4	11.7
Total	<u>2,915</u>	<u>95.3</u>	<u>33.3</u>

These figures demonstrate the lack of consistency of the middle class and the fact, even more serious, that more than 70% of the population live under financial conditions not much higher than those for subsistence.

(1) CEPAL, Course of Regional Development, Buenos Aires 1969.

With regard to the problem of geographical distribution of income, the number of details available is not -- high although some of them are sufficiently significant. In a document presented at the United Nations in 1965 titled "The experience of national and regional planning in Brazil", Celso Furtado estimated that the income "per capita" in the North-East of Brazil (with its 1.6 million square metres area and its population of almost 25 million people) hardly reached 100 dollars. An enquiry carried out by the Department of Economic Studies of the Bank of the North-East (ETENE) (1) gave as a result that the average income per inhabitant in a sample of 17 North-East cities was about 88 cruzeiros (April 1969 value) per month, which represented a figure of about 200 dollars a year.

Two circumstances may justify the difference between the two figures: on the one hand, the passing of time, since the income per inhabitant has grown these last few years more intensely in the North East than in the whole of Brazil; and on the other, the fact, observed by the said ETENE investigators, of the existence of a marked correlation between the dimension of the populations and the levels of income, which favourably affects a survey, which, like the one in the cited investigation, only referred to urban areas.

But even more expressive of the differences still -- existing on the geographic income distribution plane are the employee composition statistics according to weekly - salary levels in Sao Paulo, Parana, Rio Grande do Sul and Santa Catarina and the North East. This data, which refers to 1968 and was given in the Publication "Sudane, Dez Años" (2), is as follows:

- (1) "Distribuição e Níveis de Renda familiar no Nordeste Urbano", Fortaleza, Ceará, December, 1969.
- (2) Recife 1969. Pag. 196.

<u>Weekly salary levels</u>	<u>% of salary earners</u>		
	<u>North-East</u>	<u>Sao Paulo</u>	<u>Parana Rio Grande Sta. Catarina</u>
Less than 30	74.0	40.8	50.3
More than 30 and less than 60	15.8	32.8	34.0
More than 60	10.2	26.4	15.7

There is no doubt, in conclusion, that Brazil's economy is growing rapidly, in more than one aspect, even -- spectacularly. But there is no doubt either that the tendencies which nowadays characterize this development, do not tend to favour at all distribution equality -personal, by sectors and space - of the income.

Brazil, then, is growing, but with strong internal tensions. And if the strategy for industrial development to be adopted for the interior of Bahia is to be adequate, it will in turn have to be a corrective one capable of -- supporting such internal tensions. Consequently, it will not be improper to devote some paragraphs hereafter to a more detailed and specific analysis of these miscompensations and stranglings of the Brazilian economy.

### 2.2.2. BASIC UNBALANCING FACTORS IN BRAZIL'S PRESENT ECONOMIC DEVELOPMENT

The first factor to be taken into account in the analysis of Brazil's economy is its specific position as regarding availability of production factors in relation to other more developed countries in the western zone. In -- fact, nowadays in Brazil, the land factor is in excess -- both in the sense of simple hectares of surface area with possibilities for use in cattle raising or in agriculture, and in that of the mining and undeveloped hydraulic resources. Moreover, in relation to this abundant land, the population is small, not only in the sense that there -- exists an ample margin allowing for a large increase in the population in the inhabited zones, but especially by reason of the large demographic vacuum of the Mato and Amazon for whose settling -doubtlessly not easy - Brazil seems to be awaiting with impatience the appearance of a greater demographic pressure as a factor guaranteeing the "getting off" for these still unexplored areas. Under -- such conditions, acting with perfect economic logic, Brazil is proceeding to increase its total production on the basis of a greater use of the resources it now has available which are cheaper, thus complying with the elementary economic law of equality in the marginal productivities of the factors, thought out at their respective prices.

In accordance with these ideas both the Brazilian -- authorities' action in connection with costly projects -- whose aim is to begin penetration of certain virgin areas and their positive attitude with regard to the problem of the country's high birth rate can be understood. To this respect we can be certain that in Brazil it is instinctively expected that, within a tonic of growing productivity, every new Brazilian will be automatically capable of contributing more to the country than it needs to ensure

his own existence, and there is confidence not only in - the fact that a high population growth will be compatible with a high rate of growth in the product, but also especially in the fact that the high birth rate applied to -- abundant land will be what makes this large product possible.

In any event, the formula of "extensive" growth of the economy has been traditional in Brazil and its importance for the country's future must not be forgotten ever, even whilst accepting that the tactics of intensive growth of the product via industrialization are to acquire an increasingly growing importance.

#### Market Unbalancing Factors

For this intensive growth of the economy, market difficulties arise however, and, more specifically, stresses and unbalancing factors between domestic consumption and foreign consumption of Brazil's products.

In other words, bearing in mind that more than 70% of the Brazilian population live on levels not much higher than subsistence, the present domestic market does not offer exceptional possibilities for the increase of the industrial production. However, a country with almost 100 million people offers a potential for consumption of a very high order that would counsel the setting up of new industrial firms that, in turn, would encourage development.

We therefore find ourselves with the first stalemate that it is necessary to overcome since, if the industry existing at present tries to monopolize the whole domes--tic market by itself, the absence of new industries will



maintain the present day levels of low consumption in the undeveloped areas. And the total sales of industrial products will be slowed down until they increase in the tow of the vegetative growth of the population.

The solution to this vicious circle naturally lies in foreign trade that may enable the supply tension of -- present industry on the domestic market to be alleviated, thereby giving opportunities for starting up new indus-- tries which today are suffocated before being born by the existing industries. This foreign expansion of the exis-- ting industry seems feasible considering the degrees of concentration and integration reached and the competitive-- ness attained in manufacturing and costs.

In addition, the said expansion is imperative inas-- much as the intensification of exchanges with foreign co-- untries constitutes an expression of the increases in pro-- ductivity achieved by a country on the scale of world mar-- kets and, due to this, it is a characteristic which is in-- separable from economic development.

Even accepting that Brazil, because of its size as regards the domestic market, would not need to reach those levels per capita of exchange with foreign countries that are usual in the small developed countries in Europe, it must be recognized that the present level - less than 30 U.S. \$ per inhabitant per year - of annual exports is certainly not satisfactory, if moderately ambitious aims are contemplated, with regard to the levels of economic development to be reached.

Apart from this, it is worth bearing in mind the qua-- litative aspects of the composition of Brazil's foreign trade. Irrespective of the old controversy of whether Bra-- zil will or will not become a coffee importer, it is ob--

vicious that the present structure, preferably agricultural and mineral, of the Brazilian exports must be changed by the increase in exports of manufactured products, of a -- high additional value.

Unbalancing factors in production location

Furthermore, this growing orientation of the South of Brazil's industrial production towards foreign markets may be a coadjuvant factor together with the process of production restructuring that it will be necessary to undertake in order to eliminate the present unbalancing factors in the siting of industry. This unbalance in siting does not, of course, affect the large mass production industry for which, even taking into account the foreign -- markets, in Brazil's case is not clearly justified for -- the moment except for the existence of a single integrated industrial zone. Now, under the cover of this principle of industrial concentration, many other production -- firms of manufactured goods with a lower additional value have settled excessively in the south, supplying the whole of the very extensive national territory, not via an adequate decentralization but by means of the over expansion of their production plants and the maintenance of distribution and transport costs that are not justified "per se" in this type of low priced goods.

In its present state, the problem of the unbalance in the siting of industry in Brazil is of a such a nature that the question does not lie in certain areas or regions having less industry than others, but in the fact that -- there exist areas, regions or States which are lacking almost completely in industries or which have practically no production of certain complete sectors. Consequently, these regions bring almost all the industrial products from

the South, with regard to which they function in an economic regimen of industrial colonialism, in view of the degree of dependence on the south for the supplying of manufactured products.

It must be borne in mind, however, that these unba--lancing factors in production siting are no less expli-- cable for their being undesirable, even though it may only be in relation to the atmosphere of endeavour and indus--triousness of certain areas (as opposed to the more tradi--tional, agrarian mentality of others), the existence of - more perfect substructures and the proximity of high pur--chasing power consumer markets.

We cannot expect, therefore, that the problem will - be resolved simply by bringing it up; nor that the correc--ting actions may come from the idea of the total irratio--nality of the actions and situations that have gone befo--re. Very much to the contrary, it will be worth taking in to consideration as many positive elements as may be deri--ved from the present situation and, together with the en--couraging of the setting up of new local businesses, it will probably be necessary to look to be promoting of geo--graphical decentralization of medium sized firms situated in the South. For many of them there still does not exist the outside encouragment capable of overcoming the pro--blems that changes in internal structure and the adapta--tion of people and techniques to new surroundings, such as decentralization requires, bring with them.

#### Unbalancing factors in the Sectors

In any event, the industrialization of the North -- should be good business on a short and long term for the industry of the south, since, as is being demonstrated by the investigations at present in progress being carried out by the Commissariat of the Spanish Development Plan in connection with its Industrial Estates programme, the

biggest initial beneficiaries of the setting up of new industrial areas are the zones already industrialized, whose firms take on a large part of the supplying of equipment for the new plants. Aside from this, over a long term, -- the greater wealth in the areas where new industries are set up will create a bigger demand for high value products whose manufacture, for the moment, should still be kept centralized in the South.

This industrialization will, in addition, favour rural areas, on taking away labour from the primary sector and transferring it to industry and the services. With this, the present unbalance existing in the sector distribution of income, observable mainly in the North-East States, -- the importance of which could previously be seen.

This present lack of a balance between agriculture -- and industry and the services or, if so wished, between the rural areas and urban ones seems to be all the more uncomfortable because, nowadays, it is the land which ensures the bulk of the country 's exports which are basically used abroad on purchasing heavy equipment for supply to new industries and raw materials or intermediate products for consumption by the industries already in existence.

Even though these inequalities and stresses between the primary sector and the remainder (for example, between rural and urban areas) have already given rise to heavy migratory movements (mainly from the North-East towards the South), the human avalanche falling on the cities -- when, during times of "taking off" from the land, the agricultural working population falls from 50 or 60% to 25 or 30% in a few years, has still not happened yet in Brazil, a country where sufficient opportunities for work in the urban areas have still not arisen to encourage the rural exodus on a large scale. However, it is evident that we -

have to worry when thinking what may happen when this migration takes place in a country of 100 million people, - with a small number of urban areas to attract it if solutions are not found with regard to quickly increasing the number of towns with industry and services, capable of turning into places attracting the land workers' migratory movements.

#### Monetary unbalance

Finally, it is evident that the Brazilian economy is largely resisting the inflationary process to which it is being subjected.

It would be very superficial to consider that Brazil has more or less solved its monetary unbalance due to a number of ingenious measures having made it possible for the cruzeiro to continue functioning as a means of exchange and even by means of the due arithmetical conversion -- operations, as a basic element for bringing transactions to a satisfactory end.

However, these are not the real problems of inflation but only the facets of a second or third order thereof. The true consequences of an inflationary process are the counterdistributional effects of the price raising movements and the impact that this inflation has on the general disorientation of economic life.

As regards the first effects, the increased rates of long and short term credit beyond what inflation justifies and the difficulties for obtaining floating capital on -- the part of small and medium sized firms have already been discussed.

As regards the disorientation that inflation causes in the overall economic life, it is important to point -- out that, in view of the fact of having or not having that money made more expensive by inflation, the effect that improvements in productivity or the adoption of modern bu siness methods may have in the economic results of firms is practically nil or, at least, not very significant.

This fact in general distorts the small and medium sized industry in relation to the large one that has possibilities of self-financing or sufficient backing from Banks or other financing organizations; and, in general terms, it discourages actions such as the control of an inventory, the planning of production, the setting up of method improvements, quality control, cost controls, -- etc., all these being actions of maximum importance in an industrial "take off" stage.

The monetary unbalance is, in conclusion, one of the greatest difficulties which the industrialization program<sup>e</sup> for the interior of the State of Bahia will have to fa<sup>ce</sup>; and it is for that reason that the investigation of - the financing problems of the small and medium sized firms within an openly inflationary medium is considered to be of maximum importance, it being without any doubt at all an analysis that could be carried out at a later stage of the present Programme.

### 2.2.3. IMMEDIATE PROSPECTS IN THE INDUSTRIALIZATION OF THE NORTH EAST

The above described unbalances, observable in the -- present panorama of the Brazilian economy, are, without - doubt, sufficiently transcendental for the economic poli- cy that may be developed in Brazil in the near future not to be in a position neither to try and ignore them nor to try and solve them drastically and immediately. Likewise, it does not seem there can be excessive doubts as regards the two basic instruments of economic expansion in the im- mediately forthcoming years, i.e.: extensive growth of -- the product via the using of new lands (probably the che-apest process, in relation to the investment for a massi-ve creation of jobs in Brazil) and its intensive growth through industrialization.

It is important, however, to state that considering the degree of matureness observable at present in the Bra- zilian economy, the term industrialization can in no way be interpreted as an exclusive synonym for "creation of - new industries", but rather as an expression of a whole im- provement process of the structures of the industrial pro- duction of the country, including both the setting up of new plant and production equipment and the expansion and operational adjustment of those already existing. However, in any event, this industrializing process will be delimi- ted by the basic structural conditions analysed earlier, which it seems foreseeable to estimate will be translated in the following way:

a) The industries with a large production value and high additional value situated in the South will proceed

to increase their foreign sales gradually, in view of the need for not reducing their rate of growth of their sales by taking advantage of their conditions of size and integration, and the encouragement to export existing or to be established.

b) This attracting of the industries in the South towards foreign markets will not be turned, in practice, at least at first, into the appearance in the North-East of large sized industries, with a competitive nature with respect to the manufacturing firms of the South. On the contrary, the industrialization of the North-East will carry on taking place within the line of import substitution -- and use being made of the area's natural resources, especially when these resources are highly appraised on foreign markets.

c) The process of decentralizing the industries with a not very high additional value and a normally regional market sphere, at present located in the South and frequently oversized, will not take place easily and spontaneously, especially in those cases where to the oversize phenomenon are added circumstances of low usage of the -- production capacity existing at present, as happens in -- the case of some of the production lines and sectors.

In other words, it does not seem foreseeable that in the immediate future, the process of industrializing the North East will exceed the phase of creating an industry with a local atmosphere and medium additional value, except in the very specific case of industries with a high additional value that do not need a strict siting integration with other auxiliary and subsidiary industries, nor require very large sizes. These industries will, then, be able to be set up in the North East for reasons of the location of resources or, being substitutes of imports, under the protection of tax and financial measures. However, irres-



pective of their physical situation, it is not to be expected that these industries will make up an industrial nucleus integrated in the functional and dynamic sense of this concept.

2.2.4. CHARACTERISTICS FOR THE INDUSTRIALIZATION OF THE INTERIOR OF BAHIA

In these circumstances, it becomes necessary to -- think of the role to be played by the interior of Bahia in the industrializing process of the North East of which it forms part and of the characteristics that could be indicated as being most suitable for the projects to be situated, at first, in the industrial estates that are foreseen for that area. The prospects for industrial development in the North East, analysed earlier, and the knowledge obtained in the First Part of the present survey on -- the resources and industrial structures already existing in the State of Bahia, should enable an adequate reply to this question to be given.

At first the inexistence in the interior of Bahia of opportunities for large industry seems evident, if it were not for those which may be related to the exploitation of the zone's resources, mainly mining.

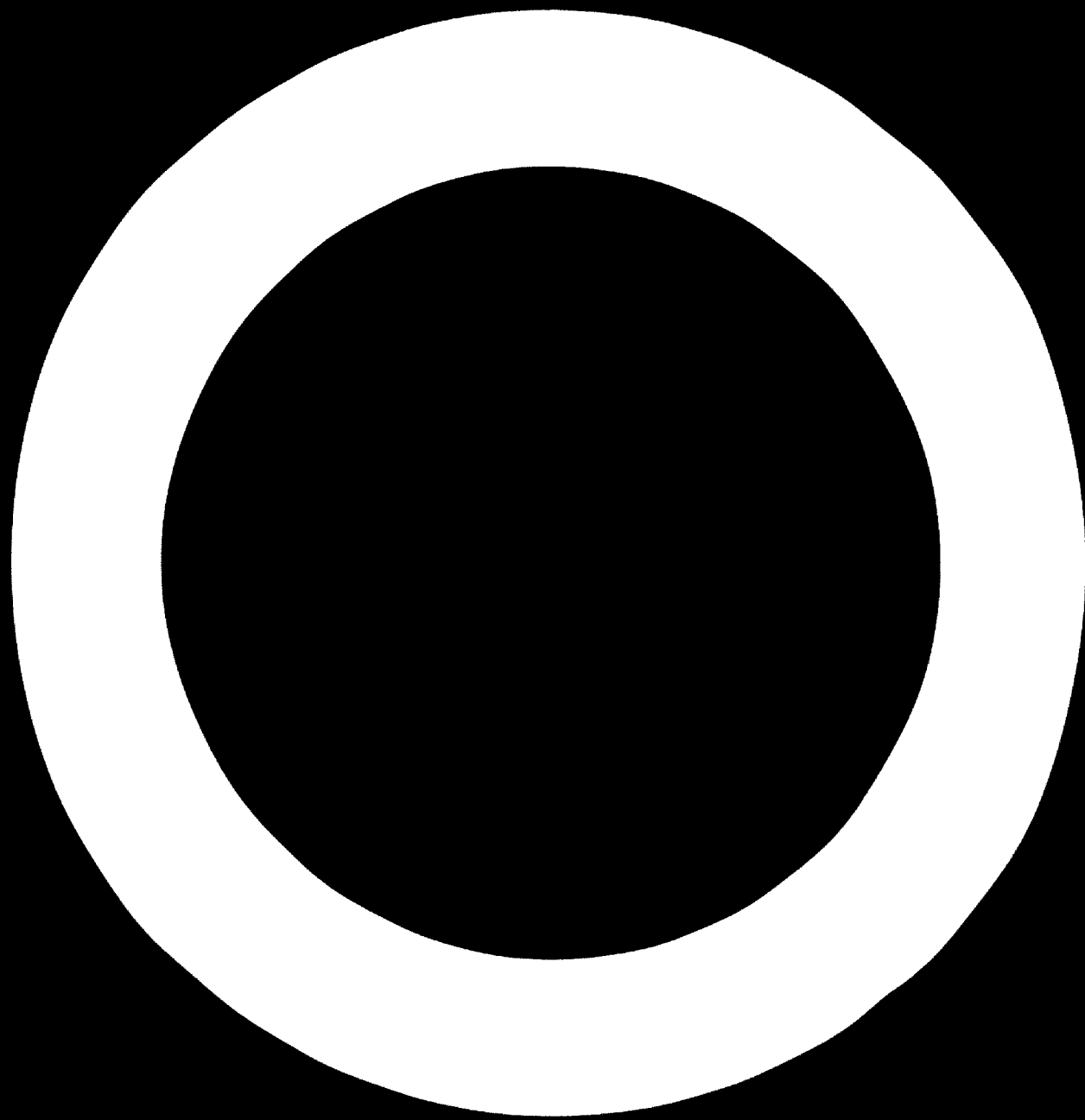
These mining resources, and any others - cattle rearing, agricultural or fishing - that are capable of serving as a basis for transformation industries which are able to find an outlet for their products in other markets in Brazil or abroad, will have to constitute the basis of the initial industrialization of the interior of Bahia -- since the local market, especially in the first stages of the programme, will offer very few prospects of a significant consumption even for articles that, in societies with a certain minimum level of development, are usually considered to be of prime necessity.

In relation with this latter aspect - lack of a local market - it may be especially important to encourage and favour those transformation industries that because of the need for abundant labour force, may be more compe-

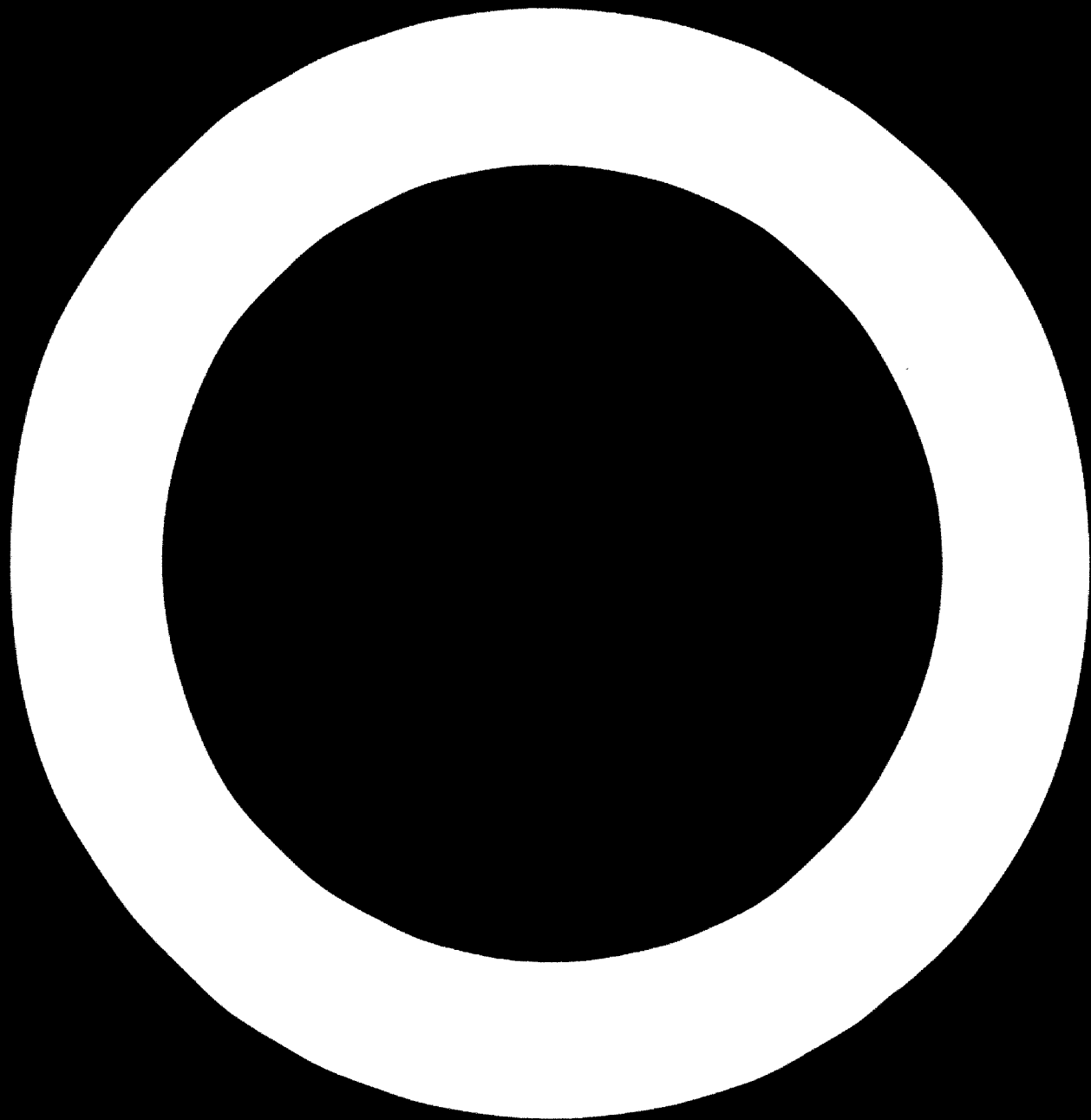
titive if they were sited in the interior of the State, in relation to the relative, initial advantage of lower salary levels.

Another way for supplementing the lack of the local market's potentiality may be the setting up of industries whose products are marketed in bigger zones in the North East, by reason of the lesser distance (calculated at :-- 3,000 - 4,000 Kms. on the round trip) between points in the interior of Bahia and the industrial zones in the South. However, as regards this type of policy, coordination of the various North Eastern developments is indispensable, bearing very much in mind the availabilities of resources in each area within the North East.

As far as the auxiliary and subsidiary industry is concerned, we should not maintain high hopes for the programme of industrializing the interior of Bahia, since, as was explained earlier, it is not to be expected, in a short term, that an industry with a high additional value and production on a large scale will arise in the North East, and subsequently in Bahia, with great needs for subcontracting with regard to its competitiveness in foreign markets; so that the eventual physical integration of various industries in areas especially provided for such effect (like the Industrial Centre of Aratu), will not necessarily give way, in a short term, to the spontaneous appearance of functionally integrated industries. Nevertheless, this must not be interpreted in the sense that as many opportunities as may arise for the setting up of auxiliary and subsidiary industries are not to be taken advantage of, once some of the industrial estates included in the programme, more specifically, Feira de Santana, are susceptible to being a natural prolongation of industrialized areas of the Reconcavo where the industries of the biggest size sited in Bahia are being set up.



**2.3. PRESELECTION**



### 2.3. PRESELECTION

The adoption, in the previous stage of this survey, of some basic strategies for the promotion of industrialization within the interior of the State of Bahia, made it possible to carry out a preselection of lines of production which could be developed as long as -considering the wide and provisional way in which it was done- it was conceived more as a pure and simple determination of matters for further investigation than as an previous delimitation of their possibilities.

In fact, the objective of the preselection was the reduction of the further direct investigation to an appropriate dimension, hoping, in this way, to avoid the attention wandering towards less significant lines of production and thereby achieving a sufficient concentration of effort on those which were of obvious interest.

In spite of this, we did not intend that such a preselection should exclude the detailed analysis of lines which, although they were not considered at the beginning, were gradually discovered to be interesting as the definitive investigation developed, and as it developed, the investigation would be expanded to include these additional possibilities of production which were discovered in this way.

On the other hand, together with the visits to manufacturers, it was considered convenient to maintain contact with distributors, bankers and industries among whose samplings figured the products under investigation. This second type of visit (the number of which was logically more reduced because of its wider nature and as a synthesis of the information to be obtained in the same)

aimed at a new perspective, different from and complementary to that of the manufacturers and producers, of the problems of industrial development in the interior of Bahia. But, at the same time, it is obvious that such contacts would have to assure unavoidably the definitive detection of any interesting and evident opportunity for setting up manufacturing plants in the interior, independent of whether it had or had not been included in the preselection which was carried out previously.

In this way the preselection only constituted a methodological instrument which, without blocking the way to any possible later rectification, allowed, on the other hand, the process of the team's environmental adaption to be accelerated notably and the possibilities of giving -- greater depth to the direct inquiries later carried out in the industrial plants of Bahia to be intensified.

The statistical basis with which the preselection was carried out, is shown in Tables 2.3.1. to 2.3.14 and includes, in a total of 273 lines of production, the following facts obtained from the industrial statistics carried out by sampling by the Foundation Getulio Vargas for 1965 and 1967:

- a) In relation to the national total
  - Production
  - Imports
  - Exports
  - Apparent consumption
  - Apparent consumption per person
  - Production value
  - Percentages which represent imports with respect to apparent consumption
  - Unit price



- b) In relation to the State of Bahia  
 Production, in absolute quantities  
 Idem, in % of the National Total  
 Production value, in absolute quantities  
 Idem, in % of the National Total

From the analysis of such statistical facts, in agreement with the facts about the area's resources and the criteria of the strategies, it was possible to deduce a certain number of "situations" from the lines of production which could be interpreted as clear symptoms of the possibilities for development. Among these "situations" we should, for example, point out the following ones:

- . Abundant resources in Bahia; considerable imports in Brazil; production almost non-existent or hardly developed in Bahia.
- . Abundant resources in Bahia; Brazilian exports being expanded and, on the whole, with possibilities of increasing considering the tendency of the world market.
- . Acceptable volume of local resources; no production in Bahia and signs of importation from other -- states with high transport costs.
- . No production in Bahia, in the case of lines of low added volume and few size demands, circumstances which make such industries into the typical producers for a local market.
- . No production in Bahia for lines of "group" production in the process of industrialization.

The mere enumeration of some of these situations --

which we have taken into account, indicates that the analysis was of a very high quality, with the result that -- the statistics were only used as a means of reference.

On the other hand, the preselection was submitted to a meticulously calculated process of elaboration. In the first place, each member of the Tecniberia team conducted his own preselection. Afterwards two working meetings were held, the first of which lasted for two days, in which the preselections were compared to obtain, following the revision which was conducted in the second meeting, "the team's" preselection. This preselection was submitted to the Project Manager of U.N.I.D.O., during a special working meeting, and he in turn introduced the opportune modifications. Finally a document was produced which was to be studied by the Industrial and Commercial Secretary and his colleagues, and this included the preselection approved by the Project Manager. A week after he received the document in question, the Industrial and Commercial Secretary called together the team and the Project Manager for a second meeting in which he expounded his remarks (which were confined to different points about the writing up -- and the inclusion of a line of production), and finally the preselection which had been carried out was approved with the previously mentioned modifications.

To sum up, the work of preselection constituted the main activity of the Tecniberia team from the 20th. October until the 3rd November, when the first meeting to decide the preselection was held with the Industrial and -- Commercial Secretary and his colleagues. The second meeting, during which the Secretary gave his agreement to the preselection, was held on the 9th November.

The grouping of lines of production into sectors was carried out according to the Brazilian sectorial classification. The mechanical, electrical and electronic industries and other high ranking ones of additional value were excluded from the statistical analysis, receiving special consideration in the preselection in agreement with what will later be indicated.

In short, the application of all the criteria and -- procedures of analysis which have been explained, gave rise, during the preselection, to the results which are subsequently stated.

### Food Products

This sector takes advantage, in various lines of production of the potential resources existing in Bahia in order to avoid imports from abroad to Brazil or from other States to that of Bahia; and in some cases, it can give rise to an increase in exports. The socio-economic impact, of this type of industry may be important, and it would not be necessary to use great financial resources to establish it.

As a result of what we have explained this sector -- will be the object of a detailed study in the second phase of the present study. The lines of production which it specifically proceeds to analyze are the following:

- Meat industries
- Industries of dairy products
- Industry for canned fruits, vegetables and preserves
- Industry for the canning of fish and shell fish
- Industry for the preparation of maize and compound fodder to feed the cattle
- Process industries fo cacao, including chocolates.

Drinks

This sector is developed in Bahia far enough to reach a sufficient level of self-supply; however, a line of production exists, that of tropical fruit juices, which is of obvious interest considering its possibilities in stimulating exportation, and this will be studied together with the line of Preservation Industry of tropical -- fruits. Thus the line "Juices of tropical fruits" is included.

Tobacco

A sector with autonomous development in which we -- didn't analyze any line of products.

Non-metallic minerals

A sector whose scope is normally local according to the additional value of its productions. In general, the State of Bahia manufactures a satisfactory supply of such products. However, we must keep in mind some present exceptions to this situation of self-supply, for example, the possibilities which certain resources in this zone offer. Finally, we thought it best to pursue the analysis of the following lines.

- Tiles
- Sanitary earthen-ware
- Electric porcelain and insulators different from those already manufactured in Bahia
- Flat glass
- Tubes of fiber cement and cement
- Various productions according to the specific resources of the State of Bahia (such as talc, asbestos, rock cristal, limestone, etc.)

Wood and Furniture

The wood resources in the State of Bahia are quantitatively important. But qualitatively the significance of its resources in noble tropical wood is of greater importance and the entire exploitation of this (including processing and commercialization) must be studied, which already implies entering the area of the furniture sector concerned with such fine wood.

The evolution of other furniture industries in the State can be analyzed in the same way, in order to consider just how far the present importation of furniture -- from other States in the Federation can be justified.

In short, the following will be investigated:

- Full exploitation of fine tropical wood.
- Wooden furniture and its commercialization in Bahia.

Natural rubber and products deriving from it

A certain number of factors exist which advise the study of this sector in Bahia, namely:

- The existence of resources both natural and, in the near future, petrochemical.
- The results already achieved by private initiative in Bahia in the field of some products transformed from rubber.
- The local and Northern market for "second and back wheels" which has founded a relatively strong re-treading industry in Bahia and the surpassing of this seemingly achieved by some manufacturers in the South.

## II-54

Consequently, also included are:

- Products processed from rubber.

Leather, skins and footwear

At present the State of Bahia exports live and "natural" skins (sold "by pe") and it later re-imports at least part of them already tanned and elaborated. Thus a skin tanning industry is lacking, which would be duly dependent upon the chemical sector (manufacture of tanning materials) and would be supplied with raw materials by some modern industrial slaughter-houses which would be adequate in -- number and size.

At the same time the State of Bahia has interesting resources of special reptile and wild mammal skins, the promotion of which should be undertaken, also with a view to exportation.

As far as the footwear industry is concerned, less - possibilities can be seen. While the problem of tanning the skins remains unsettled for this is the first necessary step which, while reducing the cost of raw material, will probably encourage the automatic establishment of -- shoe manufacturing industries. In addition to this, plastic footwear may turn out to be very competitive in respect to leather footwear, taking into consideration the introduction of petrochemicals and the low purchasing capacity of large sectors of the population. Finally, it is desirable to consider the possibilities that rubber may imply for the manufacture of footwear.

In accordance with what we have explained, the following lines of production will be studied:

- Tanning of normal skins (sheep, swine, etc.)

- General promotion of special skins (reptiles and mammals)
- Footwear of all kinds.

### Textiles and clothing

In this sector the following facts should be taken into consideration:

- The geographical and populational dimensions of -- Brazil seem to justify the immediate existence of more than one nucleus of industrial textiles in -- the country. Consequently, the fact that important textile installations exist in the South does not appear to present a definitive obstacle to the con- siderations of this sector.
- We should keep in mind the opportunities which co- uld exist for hard fibres (Jute, hemp, etc.) a gre- at resource of the State of Bahia.
- Neither should we forget the opportunities offered by petrochemicals in relation to synthetic fibres.
- The market of this State and neighbouring ones, -- justifies, in principle, the analysis of the exis- ting possi- bilities for the lines of cloth for sto- ckings, blouses, etc., that is items which are pro- duced by mechanized manufacture.
- The clothes-making industry has already been suc- cessfully introduced in the State and it is a line of production that, while demanding relatively few resources, mobilizes a lot of workmen.

These considerations lead to the inclusion of the analysis of the following lines of production:

- Possibility for leaf fibres.
- Petrochemical opportunities for synthetic fibres
- Possibilities for cloth factories.
- Possibilities for clothes-making.

### Perfumery

Related to this sector we have considered suitable to analyze the following facts and lines of production:

- Widening of the manufacturing range of the present soap manufacturers towards lines of higher quality products.
- Incidence of petrochemicals in the manufacture of biologically active detergents.

### Paper and cardboard

This sector in Bahia has only developed along the lines of "packing paper" and "Kraft paper bags". The existing market does not seem very strong at the moment and at present it lacks the chemical base for the introduction of an industry that, like the paper one, is also complicated and demands a relatively high level of investment for the positions which it creates.

On the other hand, the soft wood resources in the State of Bahia are not very significant. Other plans, which directly affect the North (for example the plant in Belém de Pará) seem very feasible, an aspect which must



be taken into consideration.

Consequently, this sector will not be analyzed, in principle, except in as far as it concerns packing material.

### Petrochemical

The introduction of a far-reaching petrochemical industry in the State of Bahia which agrees with the Federal policy in this respect, is already a fact which should be considered as a datum. Consequently we proceed to analyze:

- Perspective and incidence of the petrochemical industry to be established in Bahia.

### Chemicals

The following aspects have been considered:

- Brazil is a large importer of chemical products: in the order of 15% of its total imports correspond to chemical and pharmaceutical products.
- Bahia, to all intents and purposes lacks a chemical industry.
- Bahia offers a potential of consumption for chemical products due to the development in farming (fertilizers, insecticides, etc.) in industry (tanning, perfumery, basic textile industry).
- The socio-economic impact of the chemical industry is not exceptionally high, considering that it -- creates few positions and demands high investments.

But at the same time, taking into account the nature of the created opportunities, the chemical industry is a great stimulant to the middle classes.

- It seems that a minimum of chemical industry "on a group basis" is necessary during all industrialization processes, although it may only be in order to facilitate and accelerate the supply of certain more frequently used, chemical products to industry.

The consideration of all the previous points leads us to propose the analysis of the following line of production:

- The introduction of a chemical industry "on a group basis" in Bahia.

#### Metallurgy

This industry has been considered a sector of prime importance in the setting-up of the economic development. In addition to this, in the case of Bahia it is imperative to consider the adequate exploitation of all the mineral resources in the area to the highest possible degree of elaboration and transformation.

Consequently, the analysis of the following lines -- has been included:

- Metallurgy of all the mineral resources in the -- area to the highest possible degree of transformation.
- Rolling, profiling and brass, in relation to the

market and as a base for the already existing industries and those planned for.

- Founding.

Mechanical, electrical and electronic industries and others with a high degree of additional value

In principle, and in agreement with the adopted strategies of development, these kind of industries should not be considered in connection with the industrialization -- problems of the interior of the State of Bahia. For this reason a statistical analysis of these sectors has not been conducted.

However, the interest in these industries with high additional value is evident, especially in those cases in which great quantities of production are not necessary to reach the exact centre of exploitation. This is generally the case of industries with a high percentage of manual workers, of maintenance firms and some industries auxiliary to the mechanical industry, and the consideration of all these cases will always be opportune. In addition, we shall proceed to pay attention to a certain number of suggestions about the technical specifications of the present project. Taking all this into account, the analysis of -- the following types of production will be included:

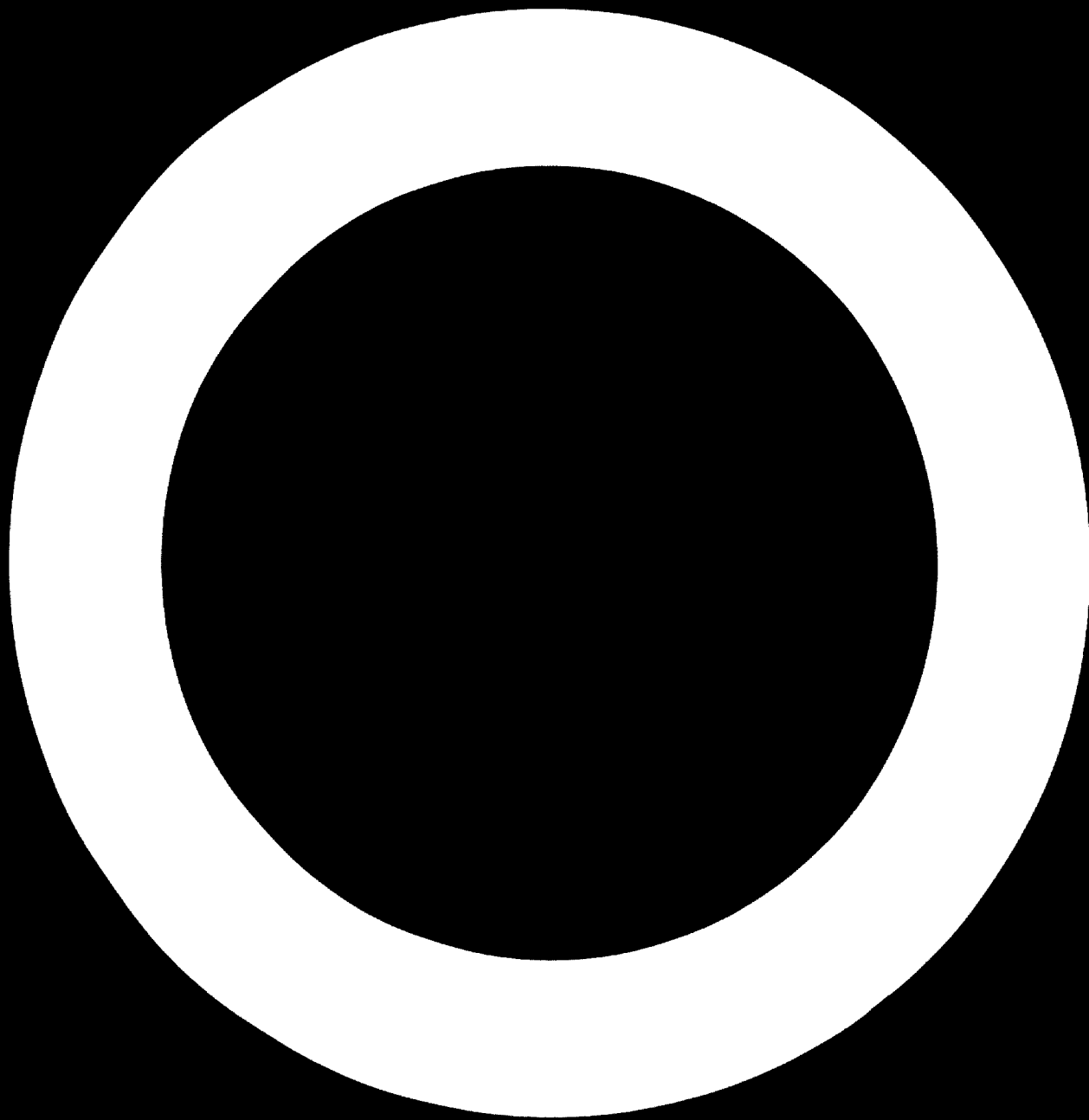
- Boiler forge and metal structures.
- Manufacture of small boats.
- Supply industries for the South industry, which will require among others, the following conditions:

- To be standardized samplings.
  - To have the high additional value to cover transport costs.
  - Not to expect so much from the contract in regard to its processes as to its very high additional value, which allow the introduction of them outside highly integrated industrial areas.
  - To constitute Brazil's imports, as an exponent of the difficulty of supplying the South.
- Assembly industries based on the advantage of cheap labour.
  - Another mechanic industry destined to local supply.

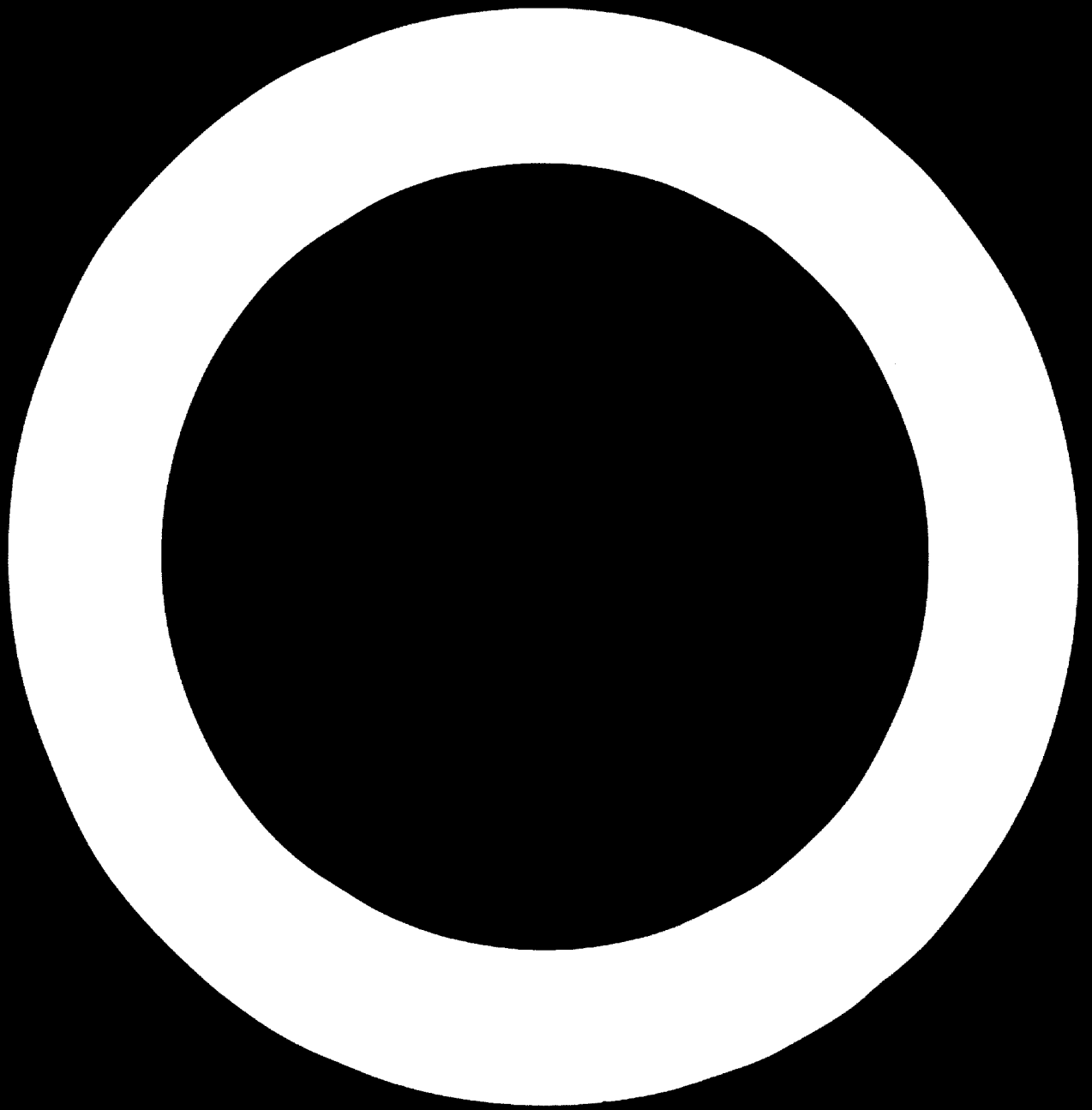
As we stated earlier, the preceding preselection -- was conducted through basically indirect processes, beginning with statistical data from the years 1965 and 1967, which were available in as much detail as was considered relevant. The latter was expressed in the consideration of some lines that, in the interim, had already been initiated or at least promoted by private enterprise. In the case of some of them, as happened with beer, it was immediately known that the line had been dealt with, and this prevented it being included in the preselection. But as far as other products were concerned -such as tiles and tyres, to quote two examples- the existing enterprises were only discovered or valued as the direct enquiry was -- conducted.

In reality, the fact that, as the result of not very up to date statistical information, the preselection may have delayed the truth in some aspects, although coinciding with it, only reinforces the validity of the princi-

ple used in the procedure; chiefly because of the pure nature of the means of preselection and the flexibility of presentation that it was given from the very beginning.



2.4. SURVEY AND ITS METHODOLOGY





**2.4.1. INTRODUCTION**

Once analyzed, as we did before, the main characteristics of the Brazilian economy and its basic unbalances together with the immediate prospects of the industrialization of the North-East of Brazil and the development -- strategies of the interior of the State of Bahia, which were used as an indicative, although not exclusive, criteria in the preselection of industrial sectors and, more concretely, in that of lines of production, we proceeded to a detailed survey of the preselected lines.

The methodology of such a survey, which had to lead to a final selection of the sectors or lines of production with prospects of development within the state, according to the order of priorities, included two stages of -- survey: direct and indirect.

In the following pages these two stages are described, and they were conducted for each of the preselected lines indicated in section 2.3.

2.4.2. INDIRECT SURVEY

The stage of indirect survey, which was necessary in order to acquire knowledge of the problems and characteristics of each line of production previous to conducting the interviews, comprised the following aspects.

a) The formation of a "technical filing card" for -- each line of production, which would allow the definition of the general aspects of the line in question.

That is, we included facts relating to: level of attainment required of the staff; competitive size, of the industrial plants (according to the orders in size-called minimum and normal, and in decentralization); dependence on other industries for their supply of raw materials, -- purchasing sectors in respect to the consumer's income -- and the price of the product; investment by employment; estimate of the additional value; relation of wages and sales and, normally, the general impression of the socio-economic impact of the line in question.

The preparation of these "technical filing card" was done according to the actual experience of the team of investigators, in the same way as the statistical data in -- the book of "industrial profiles" published by the United Nations and the data and industrial statistics included in the "1968-1971 Plan of Economic and Social Development in Spain".

The implementation of said "filing cards" gave an -- adequate previous knowledge of each line investigated and facilitated the conduction of and the profit gained from the interviews.

b) The preparation, for each line of production, of a "statistical filing card" giving information about dif-

ferent quantitative aspects of the line, such as the number of firms and their distribution according to the number of employees of each one and the value of production and productivity.

This information was compiled for the three zones of interest, that is: Brazil, the North-East and Bahia.

c) The study of the investigation carried out by PRO-INTER in the interior of the State of Bahia.

To make the study easier, a recapitulation table was drawn up to allow a rapid, overall focus on the lines of production of said inquiry which were included in the preselection carried out in section 2.3.

d) The study of the existing bibliography on each line of production, as much in its general aspect, at a national level, as in its partial aspects, at the level of the North-East and Bahia.

The aforementioned bibliography (see appendix) gave us a previous idea of the general problems of the line, as much in Brazil as in the North-East and Bahia.

All the stages of indirect investigation mentioned up till now were covered by each member of the Tecniberia group, although, as is natural, each one of the said members dealt in particular detail with those lines that were assigned to him for undertaking in the direct investigation. Said distribution of lines was done for each group of "two technicians", which had to give a more marked contrast of opinions and, in conclusion, a more trustworthy judgement.

Subsequently, and with the aim of carrying out the direct investigation, it was necessary to proceed to the

election of the firms to be visited, and to the preparation of the required questionnaires.

The latter included information relating to people to be visited and their positions in the firm; its past and present evolution in society its competitive position with respect to the local and exterior supply and the future prospects of the market; the availability of personnel and their professional qualifications; dependence on -- other firms for the supply of raw materials; general impression of its organization, technology and the kind of products manufactured.

Likewise, we also included data relating to general aspects of society, such as the financial situation, present difficulties and those which have been removed, yearly volume of invoicing, distribution percentages of the manufacturing costs, investment carried out and general ideas about the situation of the line of production seen in the perspective of the State.

### 2.4.3. GENERAL DESCRIPTION OF THE PHASE OF DIRECT SURVEY

The preselection of firms to be visited was carried out, in principle, by the team of investigators, beginning with the data from the 1969 Industrial Cadastre and the data provided by the Secretariat of the new firms which were recently established and nearly all of which were under the protection of the fiscal and financial profits of SUDENE.

The said list was presented to the Project Manager of U.N.I.D.O. for his supervision and following this, to the Industrial and Commercial Secretary, who recommended the advantage of including some Societies which did not figure on the initial list together with that of choosing a sample with a larger proportion of small industries.

Finally, and in a subsequent work meeting with personnel from the Secretariat, the list of firms to be visited was decided upon, just as it appears in the adjoining table. As can be seen, only 29 firms of the said list are situated in the interior of the State, while ~~the~~ rest, 60 firms that is, are situated in Salvador or the surrounding area. Naturally, this is due to the scarce number of industrial plants which exist in the interior of the State, in the lines which are the object of the investigation.

Once the list of firms to be visited was decided -- upon, and bearing in mind that the same included 14 visits in the Southern zone of the State, 8 in the Senhor de Bom fim-Juazeiro area and 7 in Feira de Santana, the working team was divided up. Three groups were formed, two of -- them acting independently but in the same zone, the Southern zone, visiting Jequie, Vitoria da Conquista, Itape--tinga, Itabuna and Ithaus, and the third in the Northern

zone visiting Senhor de Bomfim, Campo Formoso and Juazeiro.

Both groups were accompanied by a member of the Secretariat's team, with the aim of making introductions -- and facilitating human contact with the people being interviewed, a contact which, on the whole, was very satisfactory and open.

Once the visits to the interior of the State were made, apart from Feira de Santana which was visited independently, the phase of industrial investigation in Salvador and surrounding district was initiated, a task which also entailed the presence and company of personnel from the Commercial and Industrial Secretariat.

Finally, we proceeded to carry out another series of interviews with relevant people in the State, both in the consumer and distribution sector as well as that of the Bank, maintaining, moreover, contact with the Federation of Industries.

#### 2.4.4. UTILIZATION OF THE DATA OBTAINED

The interviews conducted were generally written up the same day as the interview, with the aim of conveying a "live" impression in the previously mentioned "filing cards of interviews", which were expanded when necessary. These reports included both the facts relating to the -- firm visited and a general opinion on the line in question and the suggestions for support and the possibilities for expansion gleaned from the interview.

The repetitive procedure of visits, with different investigations carried out on one line of production, allowed the first general impression of the line or sector of production to be made, and this was completed in agreement with the previously known facts.

Subsequently, in work meetings which were held for ten days, the members of the Tecniberia team proceeded to produce an overall critique of the lines investigated, each one contributing his comments and observations, and this gave rise to a definitive judgement on the following lines.

Finally, the judgements which were drawn up were submitted to the Project Manager of U.N.I.D.O. for his consideration and a work meeting to this effect was held with him on Monday, December 14th; with this the process of direct investigation was closed.

SECTOR	PRODUCT	FIRM VISITED	CITY
<u>FOOD</u>	MEAT PRODUCTS	FISAN	SALVADOR
	"	FRIMASA	SALVADOR*
	DAIRY PRODUCTS	LEITE GLORIA DO NORDESTE	ITAPETINGA
	"	ALIMBA	SALVADOR
	"	LATICINIOS CELESTE	VITORIA DA CONQUISTA
	DERIVATIVES FROM	CHADLER	SALVADOR
	CACAO	DOCES LAGOA LTDA.	ILHEUS
	"	CACAO IND. Y COMERCIAL	ILHEUS
	WHEAT FLOUR	MOLINO DE SALVADOR	SALVADOR
	Sponge Cakes	PRODUCTOS AGNIA CENTRAL S.A.	SALVADOR
"	BISCOITOS TOPY LTDA.	SALVADOR	
PASTES AND NOODLES	PASTIFICIO AMERICA LTDA.	SALVADOR	
PASTES AND SPONGE CAKES	IMAMBOL	SENHOE DO BONFIM	
FODDER	ALVORADA LTDA.	FEIRA DE SANTANA	
FRUIT JUICES	BAHIA DE FRUTOS	SALVADOR*	
<u>NON-METALLIC</u>	DERIVATIVES FROM	A. PORTELA	SALVADOR*
	CEMENT	ARTEFACTOS DE CEMENTO Y FERRO	ITAPETINGA
	"	BONFIM LTDA.	SALVADOR*
	FIBRE CEMENT	ETERNIT	SALVADOR*
	CANDLES	BOSCH LTDA.	SALVADOR*
	TILES	INDUSTRIAS DE AZULEJOS DE BAHIA	SALVADOR*
	GLASS BOTTLES	INDUSTRIAS DE VIDRIO SALVADOR, S.A.	SALVADOR.

11-72

\* Salvador and surrounding district.



SECTOR

PRODUCT

FIRM VISITED

CITY

WOOD AND

AGGLOMERATED BOARD

NOVOPIAI

SALVADOR\*

FURNITURE

LAMINATION OF FINE WOOD

MABASA

SALVADOR\*

HAND SAWN PRODUCTS OF FINE WOOD

MASSARANDUBA LTDA.

SALVADOR\*

HAND SAWN PRODUCTS

BAHIANA IND. NADERERA

ILHEUS

FURNITURE

IRBLA MORGIS LTDA.

SALVADOR

"

CAMAS UNIAO S.A.

FEIRA DE SANTANA

"

WALCAR INDTS. Y COMERCIO

FEIRA DE SANTANA

"

LUSSARA LTDA.

ITAPETINGA

"

DIVISAO MOVEIS RALF

SALVADOR

"

CORREA RIBEIRO INDUSTRIAL S.A.

SALVADOR

"

ITALO BRASILEIRA DE MOVEIS

SALVADOR

RUBBER

TECHNICAL PARTS OF CARS AND DOMESTIC PRODUCTS

JUDABE S.A.

SALVADOR

ARTICLES FOR SURGERY AND DOMESTIC USE

MUCAMBO LTDA.

SALVADOR

LEATHERS; SKINS AND FOOTWEAR

TANNED LEATHER

CURTUME BRAGAÇA, S.A.

SALVADOR

"

CURTUME ALLIANÇ A

JEUQUE

"

CURTUME CAMPELO

JUAZEIRO

FOOTWEAR

CAVALCANTI E SILVA LTDA.

VITORIA DA CONQUISTA

<u>SECTOR</u>	<u>PRODUCT</u>	<u>FIRM VISITED</u>	<u>CITY</u>	
<u>TEXTILES AND CLOTHING</u>	THREADS AND CORDS	BAHIANA DE SISAL	SALVADOR*	
	CORDS OF LEAF FIBRES	COSIC	VITORIA DE CONQUISTA	
	CHILDREN'S CLOTHING	ICCOL-MODAS INFANTILES	VITORIA DA CONQUISTA	
	BOYS' TROUSERS	INJER	JEQUIE	
	TROUSERS	INDUSTRIA E COMERCIO DE ROAS ESMERC	JEQUIE	
	MEN'S SHIRTS; SUITS AND TROUSERS	ALFRED DO NORDESTE	SALVADOR	
	<u>CHEMICAL INDUSTRIES</u>	OIL REFINERY	PETROBAS	SALVADOR*
		VEGETABLE OIL	INCOVEG	FEIRA DE SANTANA
		SOAP	VIEIRA GARCEZ LTDA.	SALVADOR
		?	JABOARIA CONQUISTENSE LTDA	VITORIA DA CONQUISTA
SODA AND CHLORINE		C.Q.R.	SALVADOR*	
<u>MINING</u>	DYES	TINTAS RENNER S.A.	SALVADOR*	
	PHTHALEIN DIOXIDE	CIQUINE	SALVADOR*	
	COPPER	CARAIBA METAIS S.A.	SENHOR DO BOMFIM	
	CHROMITE	CROMITAS DE BRASIL	CAIPI FORMOSO	
	?	COITEZEIRO MINERAÇÃO	CAIPI FORMOSO	
<u>METALLURGY</u>	LEAD	COBRAC	SANTO AMARO	
	TITANIUM DIOXIDE	TIBRAS	SALVADOR*	

<u>SECTOR</u>	<u>PRODUCT</u>	<u>FIRM VISITED</u>	<u>CITY</u>
<u>METALLURGY</u>	ALLOYS	SIDRA	SALVADOR*
	"	FERBASA	SALVADOR*
	SPHERICAL VALVES	INDTS. METALURGICA SALVADOR S.A.	SALVADOR
	STEEL SPRINGS	LUSO-BRASILEIRO S.A.	SALVADOR
	ALUMINUM CARPENTRY	METALURGICA INVICTA	SALVADOR
	METALLIC CARPENTRY	METALURGICA FONTE NOVA	SALVADOR
	MANUFACTURE OF GATES	RENDA PRIORI	SALVADOR
	HINGES	METALURGICA COLUMBIA	SALVADOR
		TUPERBA	SALVADOR*
		SIDERURGICA ST. AMARO S.A.	ST. AMARO
<u>IRON AND STEEL</u>			
<u>METALLURGY</u>			
<u>PROCESSED METALS</u>	METAL BOXES	RANQUES PROGRESSO	FEIRA DE SANTANA
	STRUCTURE AND BOILER MAKING	METALURGICA RAMOS	SALVADOR
	HEAVY BOILER MAKING	CESMEL	SALVADOR
	TOOLS	PEÇAS ORION S.L.	FEIRA DE SANTANA
		CIA. DE NAVEGAÇÃO SAO FRANCISCO	JUAZEIRO
<u>MATERIAL FOR TRANSPORTS</u>	"	ESTALEIROS NAVAIS BECK & CIA	SALVADOR*
	"	ESTALEIROS NAVAIS DE BAHIA, S.A.	SALVADOR*
	CHASSIS FOR LORRIES	MAGIRUS-DEUTZ	SALVADOR*

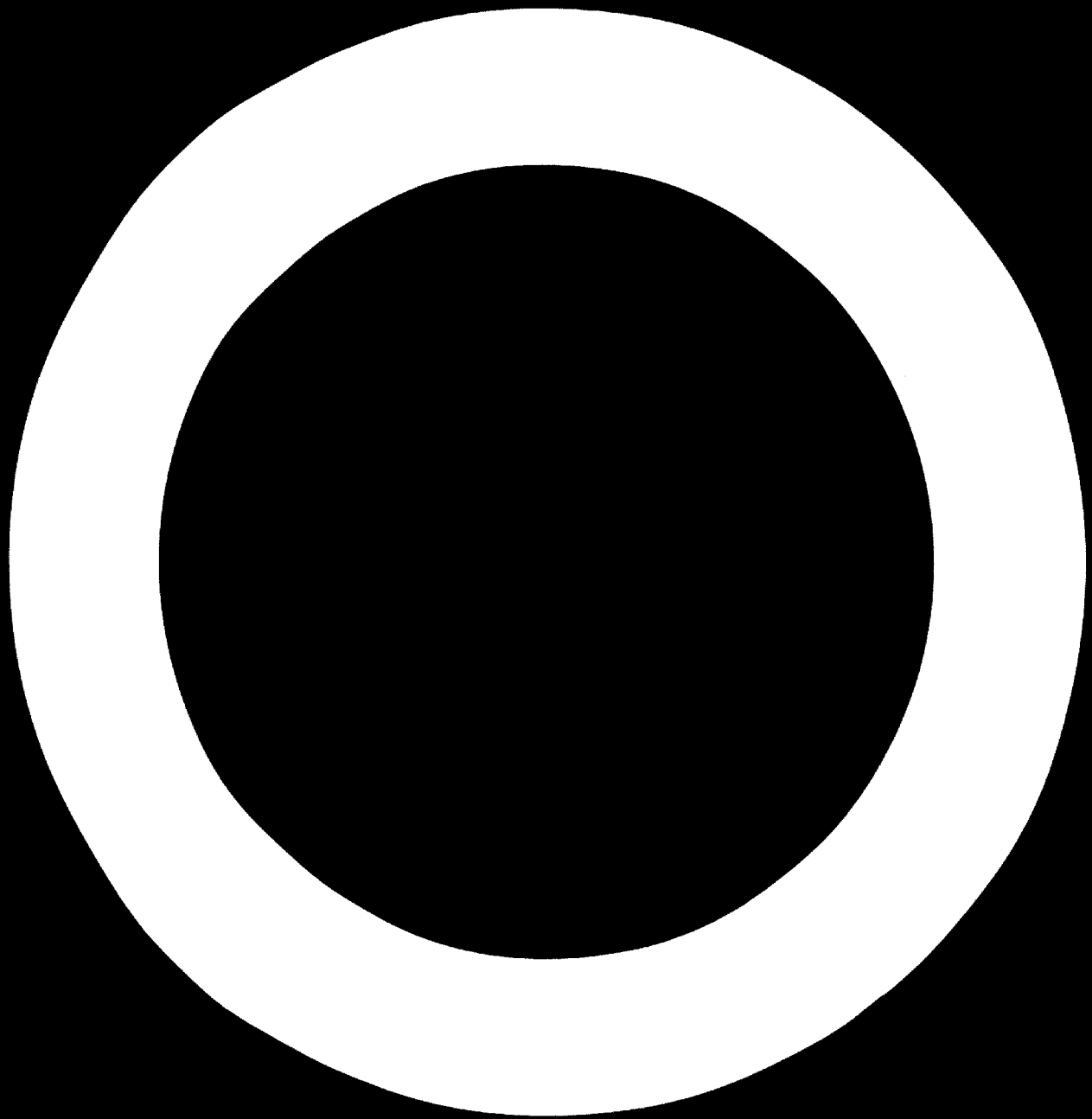
SECTOR	PRODUCT	FIRM VISITED	CITY
<u>MECHANICS</u>	DRILLS	BRASQUIP S.A.	SALVADOR
<u>VARIOUS</u>	BANK	BANCO ECONOMICO DE BAHIA S.A.	SALVADOR
	BANK	BANCO DE COMERCIO E INDUSTRIA DE BAHIA S.A.	SALVADOR
	INDUSTRY	FEDERACION DE INDUSTRIAS	SALVADOR
	CONSTRUCTION	NORBERTO ODERBRECHT	SALVADOR
	"	JOSE LESSA RIBEIRO	SALVADOR
	COMMERCIAL ESTABLISHMENT	PAES MENDOÇA S.A.	SALVADOR
	"	DUAS AMERICA S.A.	SALVADOR
	"	UNIMAR	SALVADOR
	"	CIFERMA	SALVADOR
	"	MELO & CIA	SALVADOR
	"	A. FONSECA FERRAGENS	SALVADOR
	"	CORREA RIBEIRO	SALVADOR
	"	CASA BRASIL	SALVADOR
	"	CASA GARCIA	SALVADOR

TECHNICAL

C. F. P. S. / C. F. P. S.

INDUSTRIAL DIVISION OF BANK

**2.5. SURVEY RESULTS**



## 2.5. SURVEY RESULTS

In the following pages are collected, grouped according to sectors, the Line Reports of the various productions whose possibilities of promotion in the interior of Bahia have been analyzed in the present project.

Although, in general, it has been attempted to omit the most common aspects in the production lines, such as the financial and fiscal problems or those of the difficulties in obtaining official credit or the lack of certain commercial services for the industry, these aspects having already been considered in other paragraphs of the report, a certain amount of repetition is inevitable in such subjects as the insufficiency of the local market, the competition of the industry in the South or, now less frequently, the shortage of skilled technical personnel.

The explanatory system generally follows the same model in all the production lines, although it has been esteemed convenient to maintain at a maximum the keynote -- that each member of the team gave to his reports, since this helps to lessen to a certain extent the inevitable repetition and monotony, natural in a successive assembly of similar analyses.

## 2.5.1. FOOD INDUSTRIES

### Meat Industries

#### Introduction

This is a production line included in the pre-selection because of its existing resources and its present in sufficient development.

Visits were made to a slaughter house in Simoes Filho and a cold storage chamber in Salvador. On the consumption side, Sr. Paes Mendonça, was consulted, a world power in food distribution, owner of a chain of supermarkets in Bahia and Sergipe, considered one of the most important in the north-east and included amongst the great organizations of distribution in the country.

#### Present Structure of this Industry

At the moment the meat industry in Bahia is more based on low consumption than on high local production, exporting live animals (sales "a pe") to other regions.

The lack of control in the accomplishment of sanitary standards and the custom of selling unfrozen meat favours the disloyal competition of small slaughter houses, less particular at the time of refusing unhealthy and fiscally uncontrolled live-stock.

#### Characteristics of the Offer

Supplies are inadequate: there is a large number of



middlemen in the marketing of meat, between the cattle-dealer and the slaughter, and it is these middle-men, in -- their key position as suppliers, who control the system.

Neither does the raw material possess certain qualities. It is very nutritious and tasty, but also very -- tough, partly because of race reasons (it is Indo-brazi--lian) which permits them to adapt themselves to the Sertao area; partly because of this environment in which they are reared; and partly also because of the not only exten--sive but sometimes negligent character of developments. It does not simply mean that they do not effect the action of fattening the stock, but also that simple physical con--trol of the cattle heads is lacking.

The present irregularity in the weekly rate of con--sumption in Salvador (60% of the weekly sales take place on Saturday, after the slaughter on Friday) creates -- serious problems of sub-utilization of the instalations, with strong repercussions in prices.

The outcome of all the circumstances mentioned is -- that in Bahia there is no meat industry, neither modern nor vertically developed, a fact which, apart from repre--senting the loss of a great opportunity, also affects the possibilities of other sectors such as those of leather - and skins.

### Market

However, there are favourable aspects in the market. Sr. Paes Mendonça revealed that he was highly optimistic as to the aspects of meat industries in Bahia, if they or--ganized themselves as an integrated production line (Pur-

chase, slaughter, sausage manufacture, cold storage, and canned goods) there being a very attractive market for -- all these products, especially for sausage manufacture -- and canned goods, of which this firm alone sells 1.000 metric tons a year in its chain of supermarkets in Bahia -- and Sergipe.

In more generic terms one could also talk of favourable aspects for sales, since Brazil exports meat and meat canned goods (which could allow for the maintenance in the future of a position in the outside markets) and besides this, the consumption per person is low and will tend to rise.

On the whole, authorized opinions consider that Brazil will have a shortage of bovine meat from now to 1975, balanced by a greater production of pork and a great consumption of fish. These predictions being, or not being, precise, everything seems to indicate that the meat market will be tight and that there will be an opportunity for the meat industries in Bahia.

#### Actions considered feasible and suitable

But, to make a reality of this bright potential future, it will be necessary to undertake with energy certain actions, among which it is necessary to draw out:

- a) An action on the basis of cattle-rearing, improving the cattle farms, the sanitary and physical control, localization of the cattle heads their fattening, etc. Of course, it would be difficult to strengthen suddenly this action in all the State; but it could be initiated firstly in a couple of pilot supplying - areas of another few slaughterhouses. (For example, promoting an area in the regime of extensive cattle-dealing in the south with

slaughter houses in Itapetinga or Vitoria da Conquista). In any case this cattle-dealing improvement action should provide a supply with continuity and quality.

- b) A legal action on sanitary conditions of every type in the meat industries, at every level or phase of production. An indispensable element of this action would be the establishment of very strict sanitary controls, equally strict in inspection efficiency as in the penalty rate. Also, fiscal surveillance would be recommendable, joined to actions of tax reduction on this type of industry.
- c) The promotion of cooperative formulas for the establishment of integrated meat plants, organized to operate in uniform rate because of the various dedication of the products (direct consumption, for example on Fridays, cold storage or canning other days) besides the stopping of fresh meat sales. This cooperation should eliminate middle-men, and financial help from the State to this cooperation should relieve those current problems that, no doubt, are so much due today to the proliferation of middle-men.

It definitely is a matter of carrying out an integrated action which goes from the cattle raiser to the "Meat Cooperative", also producer of leather in adequate conditions, as head of the tanning sector.

The means for this action will have to be:

- Cattle-dealing promotion

- Sanitary legislation and its control.
- Fiscal laws and its control.
- Promotion of cooperatives at the slaughter house level (Subsequently, it is even possible that others might realise the rest of the technically integrated meat industrialization).
- Financing means for circulating and fixed capital.

### Summary and Recommendations

Meat industries possess ample opportunities of resources and market (home and external) in the State of Bahia. Technically, its implantation would not offer excessive difficulties of "Know-How", personnel, or investments, neither would it be necessary to solve exceptional infrastructure problems.

Human difficulties would on the contrary be much greater. The mentality and production habits of the cattle-dealers would have to be changed: struggles against the established interests and positions already gained of the middle-men and to combat the barely satisfactory proceedings of the cattle-dealers, less demanding in sanitary and fiscal matters. In spite of these difficulties, it is considered that the possibilities of this production line justify its survey, including taking into account the projects already in existence and approved by SUDENE, which represent some 14 millions of cruzeiros relating to meat industries alone.

### Poultry Industries

The existing production of poultry and eggs in the State of Bahia is lower than the market possibilities, which, in principle, one could estimate for these products

in Bahia. This fact is nevertheless attributed, at least in part, to consumption habits.

In any case, at the moment, there does not exist -- great rationalized poultry developments, although SUDENE has already approved three projects with a total investment of 7,1 million cruzeiros.

In spite of the fact that for the promotion of this production line it will be necessary to reach some consumption habits for poultry products, nevertheless, it -- seems reasonable to advise meticulous study of the viability of poultry exploitation of a certain size in sites -- in the interior of the State which contain adequate climatological conditions for this industry.

The eventual development of the poultry industry will call for the promotion of the industry of prepared poultry feed, coordinating with it, this aspect being opportunely commented upon in the corresponding paragraph.

### Dairy Industries

#### Introduction

This production line was included as a consequence of the milk shortage in Brazil, which forces to a great importation of powdered milk and provides evident chances for these industries.

For the survey of this production line, visits were made to the main supplier of pasteurized and sterilized milk in Salvador, a small butter industry made from cream bought from the 'fazendeiros', sited in Vitoria de Conquista, and to a big industry in Itapetinga, which is developing an integrated milk promotion programme in the south of the State.

At the same time on the dealers' side, two important store keepers and owners of supermarket chains, one of -- which is of national scale, were consulted.

### Present Situation

A logical aim for a milk policy in Bahia could be -- that of intensifying the consumption of pasteurized and - sterilized milk to a maximum, and reducing that of powde- red milk, whose use should be limited to clearly justified cases of the absence of productive cattle in the area, -- with the consequent necessity of large transports.

However, the situation is just the opposite. As a -- consequence of the milk shortage, the prohibition of sel- ling natural milk only served to raise the price of the - pasteurized milk, which because of its price, remains con- verted in a consumptin being restricted to the wealthy -- classes. The main part of the consumption is assured by - powdered milk, imported from other States or from abroad and based on a reduced "per capita" consumption. It seems that in Brazil he who makes an effort to obtain milk, -- wants to benefit to the maximum from that effort and use, for his own profit, the misrepresentation in favour of -- powdered milk which has been given its position by the -- bad tradition of milk production in the habits of the con- sumers. The result of all this is the lack of populariza- tion of dairy consumption.

### Characteristics of the Offer

Like practically all the industries of primary trans- formation of the cattle-raising/agricultural sector, the milk industries call for the resolution of the basic pro- blem of raw materials, which in the case of milk in Bahia is faced with the serious difficulty of indo-brazilian --

cattle, with very low milk production. There only exists the possibility of establishing intensive farms of dairy cattle, of different or improved races, in the new irrigated lands (like those of the Iapicuré) or in good pasture areas (in exactly the same way as private initiative in the Itapetinga zone is being promoted).

Once these areas of possible intensification of milk production have been selected, it will be necessary to -- improve their infrastructures, particularly in connection with the access ways and communications for the collection of milk from the farms and exploitations.

Another solution, already in the course of being -- tried out and with limited possibilities, is the importation of selective goats, good producers of milk and susceptible to adapt themselves to the drier areas of the -- Sertao.

#### The market

At present 70% of consumption is assured by powdered milk, the other part being the market practically controlled by a big international firm, now based in Brazil. There are also private sales of natural milk; liquid pasteurized milk is expensive and lacks a favourable reputation and one is able to consider in this respect that the commercial efficiency of the milk plants being operated today is somewhat deficient.

#### Feasible and suitable actions

The "popularization" according to prices and consumption habits, of pasteurized and sterilized milk, is according to what has been said, an objective suited to the -- zone food requirements. The development of a network of

modern milk plants in some important population centres - could constitute a first action of great interest; on the base, naturally, of organizing very adequately not only -- the collection of natural milk but also the distribution and delivery of pasteurized milk. The new plants, on the other hand, would have to contribute with their efficiency, to the reduction in the price of milk.

However, this popularization of milk, having provoked a growth in consumption, could make room for a stoppage of offer to a much greater extent if half-measures were not taken for the opportune action of improving the milk production on a grand scale through complete widespread labour, including:

- Creation of pastures and improvement of those in existence.
- Improvement of race (artificial insemination, importation of sires for crossing the breeds, etc.)
- Improvement of cow-barns and of hygienic conditions of all types for cattle, as well as its veterinary control.
- Organization of collecting and dealing systems.

Actions of this type have already been initiated, according to what has been said, by private companies in -- the south of the State and they represent high investment and big risks. So a problem is created which will not always find an easy solution in:

- a) finding new zones in which this work can be developed.
- b) successfully finishing the milk promotion work.



c) Orientating such production increases (in as much as local consumption) in favour of liquid milk, pasteurized and sterilized, assigning only a portion of the consequent natural milk production to powdered milk, with a view, principally, to its exporting to those zones of Brazil less worried about obtaining fresh milk.

### Recommendations and Conclusions

It is obvious that the milk industry's development shows a great generic interest, mainly for food policy -- reasons.

However, resources are limited and the market is somewhat misrepresented, accustomed already to consumption of high-price milk. On the other hand, there exists the problem of natural milk sales, to which an end is being proceeded to be put.

All of this involves considerable difficulties for a quick and suitable development of dairy industries.

On the first immediate level, the objective, keeping to a realistic tone, could consist of creating or updating (according to the case) milk plants in some of the main population centres supressing in these (and in their country areas being influenced) the natural milk sales, replacing it integrally for pasteurized milk, at reasonable -- prices, thanks to good organization in collection, an essential aspect for the good working of the centres.

On a second step, it would be a matter of studying the progress of the milk in the new zones (with natural pastures or in new irrigated lands) by integrated programmes that include from the adequacy of the pastures and --

cattle-dealing exploitations to the marketing and distribution of the various products, allowing a wider and more rational consumption of the milk and dairy products.

Preserved fruit and vegetables; and tropical juices and sweets

Introduction

The existence of abundant resources of products considered "exotic" in countries of a high degree of economic development, as well as the presence of new irrigated -- lands for which very important horticultural productions are foreseen, have justified the survey of this range of production lines in the fruit and vegetable canned goods.

The survey has included the visit to an important -- factory of tropical juices in the industrial centre of -- Aratu; one of guava sweets in Salvador; another of cocoa jelly in Ilheus; and conversations on this specific matter with two major store-keepers of food products having primary importance in Bahia.

Fruit - Present situation

In spite of the fact that, in theory, there should exist a well-developed industry of products, attractive at first sight, the reality is that, except for the juice plant sited in Aratu, which is of medium importance, what is abundant is small companies, some not much more than family ones, almost simple shops, with their own production and very simple sales networks.

Problems surrounding the offer

The irregularity of the supply of raw materials is

the first serious difficulty, even though it seems paradoxical. Years ago, a company dedicated to the manufacture of coconut - with its various uses had to close down for this problem of supplies; tropical fruit grow in the fields, but it is not a cultivation that belongs to anyone in particular and nobody bothers in consequence to organize a systematical collection; besides for some of them -- there is the seasonal problem.

The problem of fruit supply for the process industry implies sufficiently serious conditions as to make one of the existing companies proceed with the development - now or in a near future - of its own plantations.

On the other hand, there is no need to anticipate technological difficulties for the procurement of normal products - if wishing, on the contrary, a serious advance to the level of exterior market, it would certainly be necessary to proceed with new technologies in order to remove some of the less agreeable details of certain fruit, (e.g. fibrous fruit) or to sophisticate the flavour, perhaps eliminating the habitual tendency to obtain products which are to a certain extent over-sweet and which quickly satiate.

### Market

These last observations arise from the fact that competition is high in the international market of tropical fruits and juices in which some large western supply firms operate on the basis of mass purchase of fruit at a very low price, taking advantage also of perfect sale networks, not only for these products but also for its whole range of food manufactures.

As to the interior market, it seems that the supply of juices is enough (for the main factories of other -- north-east States, and for those already existing in Bahia, as well as for the elementary procurement of fresh fruit juices in the shops). On the contrary, the wholesalers have seen serious possibilities in the manufacture of preserves, an opinion that seems to be confirmed by the commercial results that the interviewed manufacturers supply, concerning themselves and this production line in general.

### Canned Vegetables

As for vegetable canned goods, there exists a suitable market, today kept up by imports from other States or from abroad. The development of this production line, however, depends on the effective development of irrigation plans, that concretely seems to go favourably, in accordance with the programmes established in each case.

### Actions which are considered feasible and recommendations for the sector

From all the above said, it can be deducted, in the first place, that the manufacture of tropical juices does not appear to need to be recommended, as it is already sufficiently cared for. On the contrary, the fruit conserves and, in their turn, the vegetable conserves, must be considered.

But the problems pointed out, in respect of raw material supplies and the competition in the market recommend action in the following criteria line:

1. To integrate the fruit collection in these productions, through the organization (direct or through their branches) of real plantations or, in

- other cases, of built-up collection teams.
2. To arrange a correct marketing, including propa--ganda in it to popularize the trade mark or name; quicken and make distribution in time, etc.
  3. Introduce innovations, if it is possible, overcoming some of the practical limitations, which, day by day, reduce the commercial realities of many tropical products in respect of their possibilities which their exotisme suggests.

So, it appears that interesting possibilities exist in tropical preserves, but the problem can only be correctly tackled through determined means.

Therefore, a study of this production line will have to be made, especially finalizing a meticulous analysis of its conditions.

#### Canned fish

In accordance with what was shown in the analysis of natural resources, fishing possibilities in Bahia are limited to the catch, principally through the art of fish hooks, of species of great quality, all of this as a consequence of the rocky nature of the sea-bed and the influence of the ocean currents of Brazil.

Another important fishing resource is crustaceans -- (shrimps and lobsters) particularly abundant on the south coast of the State.

The present market (really reduced as a consequence of the lack of a "hinterland" to be supplied and a low buying power of a great percentage of the population of the coastal zone) is sufficiently looked after by a production being rudimentarily and mechanically carried out in most cases.

However, one should not scorn the possibility of organizing fishing exploitations of the highest size in the regime of high-sea fishery for a near future, preferably situated in the south of the State and fundamentally -- orientated for the supply of crustaceans and fine fish to the market of Rio de Janeiro and Sao Paulo. Two circumstances could powerfully contribute to the development of the fishing industry in Bahia; on one side, the general growth of fish consumption in Brazil which is recognized as really reduced at present; and on the other side, the putting into service of the highway BR-101, near the coast, which will represent the possibility of effecting very rapid deliveries by road, in refrigerated lorries, to the markets of the south, at a distance of a little more than 1,000 kilometers from the south of Bahia by the new road. These road transports can be considered as a good alternative in relation to the direct unloading in the ports of the south, the cycles of the fish having to be considered in this choice, in any case achieved and the total costs, including transport, in the market of destination.

Additionally, the establishment of a canning industry (principally of tuna and shrimps) offers evident opportunities, principally taking into account that minimum dimensions are not excessive in this type of the same as is that fact of exportation possibilities - without forgetting its own local market in which distributing chains at present already effect good sales of conserves of fish imported from other States of Brazil or from abroad. Consequently, it seems to be possible to recommend, for the future phases of this project, the study of the viability for the gradual implantation of a canned fish industry in Bahia, to be sited probably on the south coast of the State.

Preparations of Maize and Mixed Fodder

The necessity for cattle-dealing development and the existence of abundant resources of maize and other products suggests that it would be convenient to consider these -- production lines.

A visit was made to a manufacturer in Feira de Santana and another in Salvador, having arrived at the following conclusions:

- . The factories for mixed fodder, operating at present, are small and mainly located in the Salvador area, with a limited radius of commercial influence. Static formulas are used, whereby no benefit is gained from all the resources available in the zone and its corresponding facilities.
- . There exists abundant resources of raw materials, such as maize, cotton cake, wheat "farela" (by-product of the wheat-mills in Salvador) - wart-weed cake and others whose production should be increased in a near future - meal made from fish, bones, meats, alfalfa to be obtained from the new irrigated lands, etc.
- . The technology of manufacture is simple and does not need qualified labourers.
- . Even though in modern plants employment is reduced due to automatization, the investment/operator relationship is favourable. In any case, this line has an important capital for cattle-dealing development. The labourers necessary are barely qualified.

Therefore, a study of this line is recommended, in accordance with the planes of poultry and cattle-dealing expansion.

### Cocoa derivatives

#### Introduction

The importance of the production of cocoa in the Ilheus area, as well as the generic impression that the industrialization of these products could be profitable for Bahian and Brazilian economy, have justified the inclusion of this production line in the pre-selection.

However, Cocoa production in Bahia has quite a history and a sufficient complexity, so that trying to investigate its problems by only a small number of interviews, offers inadequate results. It is because of this that the survey has been principally based on the examination of fundamental texts on the matter and, more especially, on the excellent study by the firm "PRO-URB" on the integral planning of the municipality of Ilheus, in which they dedicate very interesting extensive paragraphs to the examination of such a delicate problem.

This elemental basis of documentation having been obtained, two cocoa process companies were contacted, one - in Salvador and another in Ilheus.

#### Structure of the Production

Brazil holds 13.3% of world cocoa production - certainly an important position, but in an aspect of relative contraction since in 1952/56 Brazil's contribution to the world cocoa production was 17.6%. However this does not implicate that production in Brazil has already reduced



in absolute terms but only that it has maintained stable while world production and consumption has risen. In fact, from 1960 to 1967, world consumption of cocoa rose 40% but it was the African countries, mainly Ghana, that occupied themselves in attending to this increase in demand, in so doing reaching the present absorption of 70% of the total market. Definitely, like it or not, Brazil has moved down to occupy the role of second line producer.

In all, Brazil is basically a cocoa exporter. Only 8% of production is destined for internal consumption. In the economy of Brazilian cocoa, Bahia occupies a primary position in securing 93% of the national production.

On the other hand, the cocoa economy in Brazil, for the most part, is an economy of industrialized cocoa. This industrialization was initiated in 1926, in Ilheus to be precise, when the Victoria factory of cocoa-butter was put into action. Industrialization advanced slowly -- from that date up to the beginning of the IIInd World War, up to the point when in 1940 only 1.6% of exports were -- constituted of transformed cocoa exportations (butter, cakes). But between 1940 and 1966, the post-war gave way to opportunities that Brazil did not waste. Actually about 18% of the value of exportations corresponds to manufactured exports. Naturally, this figure wavers from year to year, as when brute cocoa betters in price, the exportation of butter and slabs automatically drops.

### The Offer

To avoid going deeper into the subject, the recommendations, apparently obvious, would be the fight for an in

dustrialization of up to 100% of cocoa products. Things however are not so simple as to make this policy possible.

The basic problem probably is that of supplies. Concretely, in the tropics - where it is obtained - cocoa can not be stored for more than 4 months without deteriorating. At the moment, the construction of huge, very expensive, silos is being tried out, but it does not appear that the technical problems have been entirely solved.

The other possibility would have been to commit oneself to the manufacture of the final products (e.g. chocolate, sweets, etc.) but the companies in the countries -- with a chocolate market (strictly speaking cold countries) took the lead years ago and the situation is difficult to reverse.

The market consequently remained in the hands of the buyers of crude cocoa, whose position was reinforced, besides, with the creation of the Cocoa Exchange in New -- York in 1926, a financier of stocks and assurer of risks provoked by the oscillation in the harvest.

Even so, and as aforementioned, the war was made good use of and the percentage of cocoa sales through processing (butter, cakes) was able to increase. At present, the African countries and, principally Ghana, are striking out to solve the problem of supplies. From being solved, it is obvious that cocoa economy can pass from the hands of the consumers to those of the producers.

Perhaps this would allow the latter to adopt a tough policy and exclusively plant the world cocoa business in terms of elaborate products. But in as much as such a --

thing would not succeed, industrialization on a medium level of process would have to be considered as a simple alternative: in "good" years it would be more economical to sell without processing; in "bad" years, processed; obtaining a high income from the adequate distribution of the offer between crude and processed in a long-term basis.

Specific problems of the Bahian production

Apart from that, in concrete relation to Bahia, it is necessary to remember the following facts:

1. 80% of the capacity of cocoa processing in the State is based in Salvador, the place where the cocoa arrives after excessive transport costs, -- showing the inadequacy of the present communications.
2. The actual cocoa production in Ilheus and its -- area, is at present confronted with serious infrastructural problems, over-valued lands and productivity decreasing by the acre, due, amongst other things, to the following reasons: excess of old plants, many of more than 50 years; it being that the maximum productivity of cocoa is obtained -- when the plant is between 8 and 15 years old, -- plants spaced 4 meters apart, where now 3 meters is used, and there is talk of using 2 meters transport deficiencies and lack of use of scientific cultivation proceedings.
3. In all, there is a long complicated history of Brazilian cocoa policy, revolving around a protection that is neither convincing nor successful, subtle in the employed proceedings (fiscal and cre

ditary) in the end, produces the impression that it has been maintaining a certain "status quo", because if it was unsatisfactory the social and economic consequences of the breakdown of the system would be even worse.

The visits that were made, surrounded by an extraordinary informative reserve, not encountered in any other sector, confirmed the alternative character that in relation to gross sales, has an average transformation, which every campaign judges in agreement with the situation of the market and the prices.

The industrialization is definitely an additional opportunity for the producer, an element more in his strategy, and apparently, it is worth the effort to maintain this opinion even in spite of the incidence it could have in the results - to maintain the manufacturing investments, sub-utilized on a longterm basis.

Another interesting aspect is the commercial and industrial force of the Bahian chocolate industry in competition with the manufacturers in the south: this terrain being for he who operates on a national scale- the unstable equilibrium of cocoa in favour of consumption areas.

#### Conclusions and Recommendations

Keeping in mind what has been said, it is obvious -- that the formulation of opinions of firm comprehensiveness on the policy of industrialization of cocoa exceeds very much the frame of possibilities of a rapid recognition of the industry in the State of Bahia.

Besides, the impression obtained is that many problems remain to be solved on the level of the primary sector, before the problem of cocoa industrialization can be approved with stability.

The problem of reconsiderating the siting of the chocolate industry destined for internal consumption (which could constitute a starting point for the exportation) is an obvious recommendation. But, otherwise, it does not seem to provide any basis for the formulation of recommendations neither in favour nor against the earlier study of the cocoa industry; or the geographical restructure of the existing productive installation in Salvador and Ilheus, searching for a situation of factories much nearer the plantations.

**2.5.2. PROCESSING INDUSTRIES FOR NON-METALLIC MINERALS****Cement derivatives****Preliminary results of the survey**

The results of the effected survey show that the sector has at present 50 productive centres, a great part of which are around Salvador, generally of reduced dimensions, since the average figures for the number of work-men per establishment normally vary in a gap of 5 to 20. Only about 8 establishments of any importance exist, 4 of these with about 200 men per establishment, and the other 4 grouped together have some 350 work-men.

The 4 main industries mentioned are dedicated to the manufacture of pre-moulded stones, cement derivatives -asbestos, stakes, reinforced concrete posts, and tubes, while the rest of the Companies in existence are dedicated to the production of structures and pre-moulded stones, stakes, girders, blocks, handles, tubes and hydraulic --bricks, these last few being those that represent the --greatest percentage of the lines in production, of the establishments of small dimension.

There exist another two firm projects for the manufacture of reinforced concrete blocks, cement blocks, tubes and other cement derivatives, such as (in the initial phase of planning) a project for the development of cement pre-moulded goods.

Present problems of production and market

With respect to raw materials, the sector is at present being stifled by the lack of cement. However, once the foreseen expansions and new installations are in operation, this problem will be satisfactorily solved.

Demand in Bahia for cement by-products - especially asbestos, which is being used more and more for covering houses and factories and pre-fabricated goods - is still not very high. This hinders manufacturing processes on a large scale, indispensable for reducing costs, especially with pre-fabricated goods, as well as the possibilities for rapid development in the cement by-product industry, for example asbestos which is an industry which could be expanded with low investments.

Recommendations and conclusions

A survey of this sector is not recommended because on the whole, the prices of these products prevents long-distance transport and moreover it is felt that the present installations and existing new projects will cover the local market quite adequately.

The lack of competition in products transported long or middle distances will make interior supplies balance the demand in spite of the possible distortions which might occur from time to time in particular lines and in spite of changes in the rhythm of public works.

Glazed tiles and ceramics in generalIntroduction

This sector, particularly the production of glazed tiles, was included in the preselection because of the -- present availability of adequate raw material (clays) in the State and because production statistics used (1967) did not show the manufacture of tiles nor some other ceramics necessary to supply internal consumption in Bahia.

Primary results of the survey

The stimulus in the tile sector over the last two years has allowed the present production capacity in the -- State of white, coloured and decorative tiles to reach -- 3.5 million M<sup>2</sup> per annum. This figure is higher than -- Bahia's internal demand, which represents 25% of this production capacity.

In spite of this and owing to sales in other states, the two firms, which operate in mutual competition, are expanding or have plans to expand. This will allow them to reach almost double the present production capacity and therefore increase their supplies to markets in the south of the country, Rio de Janeiro and Sao Paulo in particular, which already absorb around 40% of both factories' production.

Regarding other pieces of ceramic work such as plates (white or decorated) and ceramic bricks, there are -- two projects in CIA with capacity around 10 million plates



per annum and 325,000 m<sup>2</sup> bricks, per annum respectively which will cover the local market even allowing for export to other markets in the Northeast. An important project is being analysed for the manufacture of ceramic flooring, with an inversion of over 6 million dollars and the possibility of setting up two more factories is being studied. These factories would produce ceramic bricks and -- other products in general, although of lesser importance.

With regard to the blocks, roofing tiles, handles -- and bricks sector, there are 150 factories of small capacity distributed all over the State. The average number of employees is 13 and only three of the factories has -- over 80 workers. A project for silical blocks and bricks is being installed and it will have a capacity of -- 10,800,000 units per annum and an inversion of around -- 800,000 dollars.

#### Remarks on the market

As a result of the survey, it has been estimated -- that the local market receives sufficient supplies and -- that importations from the South will be limited, especially regarding the glazed tile sector and some types of -- special or decorative tiles.

The glazed tile sector is entirely an exporting sector and a sharpened expansion would appear apparent unless the surveys being carried out by the country's tile producers' Association prove the possibility of exporting to other markets competing in prices and quality.

#### Actions considered appropriate

No special action would appear necessary, except for

adequate attention to the problems caused by lack of working capital found in the small firms.

Recommendations and conclusions

A survey is not recommended since this sector is developing greatly and the inversions, after the foreseen expansion, will surpass 15 million dollars in the two glazed tile firms alone and Societies of firm financial standing are connected with the development.

It is felt that the future of the tile sector will thus be solved by the initiative taken by the firms themselves in view of the results of the survey being carried at present. It is also considered that the manufacture of ceramics for construction should develop in accordance -- with the growing demand of the market.

With respect to the ceramic industry in general and its working capital problems, shown in the survey carried out by PROINTER and which mainly affect the small ceramic industries in the interior of the State, it is hoped that they will receive the necessary attention from competent authority. The trend towards expansion in most of the firms included in the above-mentioned investigation is very significant.

Flat glassIntroduction

Flat glass production was included in the preselection because of the high transport costs (including breakage costs) for this product and the lack in Bahia of this line of production, essential in a State with a surface area the size of France and 7 million inhabitants. On the other hand, the building plans laid out by the BNH (Banco Nacional de Habitação) would appear to assure a good market for flat glass.

Since there is no flat glass factory in the State, the survey, first, was directed towards visiting a bottle factory in Salvador in order to be able to study the evolution in a line of production technically similar in the State. Looking at the market, the two building firms visited during interviews with consumers and distributors, allowed the possibilities in this line to be estimated. The survey was finally completed with indirect studies.

Present structure

The fact that there are no flat glass factories in Bahia does mean that supplies are unsatisfactory according to the building firms visited, who had no complaints. In Brasil, the flat glass market is suffering a bad crisis of insufficient demand. It is estimated that only 43% of the present production capacity is being used up.

Production is concentrated in Sao Paulo, and only -- two firms cover nearly all the supplies. The present crisis in demand has obliged these two firms, in spite of -- their strong position in the market, to close down some of their factories.

Besides this, the flat glass industry in Brasil is feeling the costly supplies of sodium carbonat which is monopolised by the Companhia Nacional de Alcalis, de Cabo Frio, Rio de Janeiro. Internal prices are four times -- higher than international prices.

Apart from these aspects, the survey carried out with the bottle industry in Salvador did not show any important technical obstacles in the manufacture of flat glass in Bahia.

#### The market

The present market for flat glass in Bahia could be estimated at around 350,000 M<sup>2</sup> per annum at its lowest. If the house building plans in Brasil reach the foreseen rhythm of 300,000 houses a year (i.e. 50% more than reached at present) the consumption of flat glass would normally reach 500,000 M<sup>2</sup> per annum, since the construction of commercial buildings would not fluctuate.

#### Conclusions and recommendations

It should be realised that the BNH's building plans, increasing to the originally foreseen rhythm, will not solve the oversided crisis in flat glass production, not so much from the point of view of the capacity of each --

plant but of the industry seen as a whole.

Under such circumstances, it would be advisable to recommend this line of production for Bahia's industrialization programme in the interior. Many years will have to pass before the market will allow consideration of this industry in the State, which under other circumstances -- would have been logical.

### Sanitary earthenware

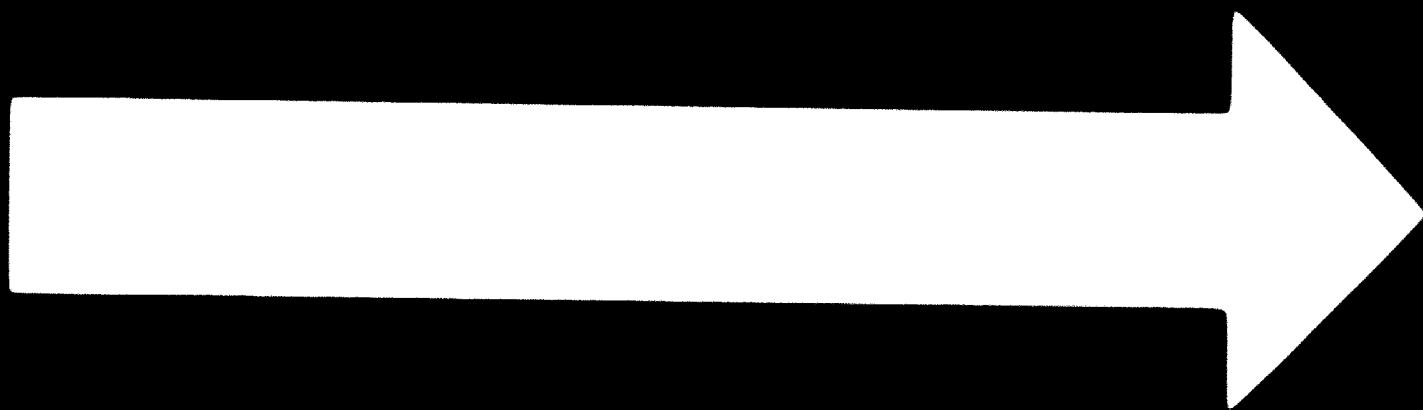
#### Introduction

According to the facts of the industrial survey carried out by the Getulio Vargas Foundation, in Bahia there is a sanitary earthenware factory which produced insignificant numbers of toilet goods in 1965 and 1967. This factory however, was not found out in the Industrial Census of 1969 of the Industries Federation. Six stores for these products were visited in order to obtain more precise information. They were: CIERMA, MELO, A. FONSECA, FERRA--GENS, CORREA RIBEIRO, CASA BRASIL and CASA GARCIA, none of which knew or had known manufacturers in this line of production in the State. The most probable explanation is that these productions recorded by the Getulio Vargas -- Foundation were only test pieces tried out by a manufacturer of table earthenware and now manufacturing glazed tiles.

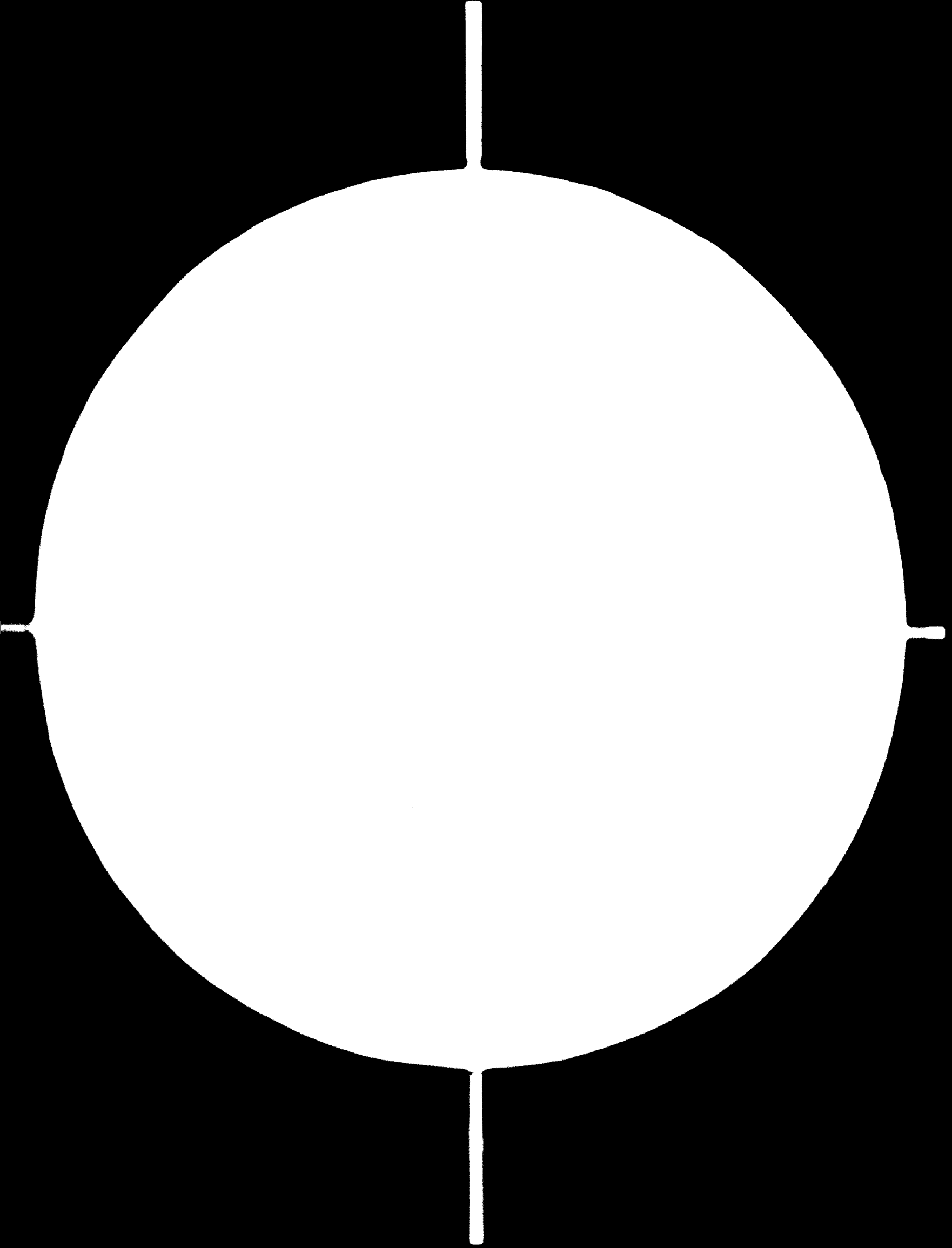
#### Present situation of the market

All the above mentioned stores, who are supplied from the industrial areas in the South, pointed out the favourable prospects of the market, encouraged by the building

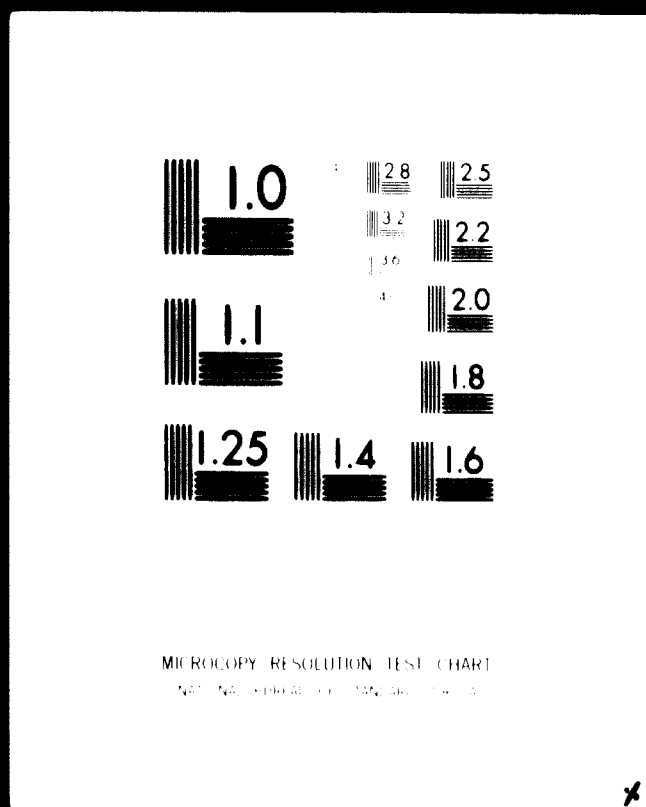
**G - 560**



**81.08.24**



4 OF 7  
02510



24 x  
D



plans of the Banco Nacional de Habitação (BNH). Some of these stores felt that if a factory for sanitary earthenware were put into operation, it would be able to compete with manufacturers in the South and not only in Bahia but also in other Northeast States.

#### Conclusion and recommendations

The manufacture of sanitary earthenware would seem to be definitely, the typical product situated in the South of the country and which is not decentralised, which means that transport costs are excessively high for a fragile and not very expensive material.

It would appear that a survey in this line of production should be recommended, in view of the fact that Bahia can count on its own resources of raw material as well as a quite important market produced by the present house building plans and these plans will have to be intensified owing to the lack of housing.

#### High and low voltage electric insulators

It is obvious that the State of Bahia has the possibility to manufacture porcelain industrial insulators and this is proved by the fact that a factory manufacturing sparking plugs for cars is already in operation in the Industrial Centre of Aratu.

On the other hand, Brasil imports electric insulators which constitutes a typical assumption for the establishment of this production line.

Moreover, if the existence of a copper industry which could sooner or later lead to a transformer industry in such a product is taken into account, manufacturing -- plants of high and low voltage insulators in Bahia could give place to the creation of industries manufacturing -- electrical equipment.

The possibilities of installing this line of production in Bahia have been proved by the fact that SUDENE has already approved a project for the installation of a plant for "complete insulators". Since the content and importance of this project is unknown, an analysis of the possibilities for this line of production would be recommended.

Exploitation of other non-metallic minerals resources in the area

The existing exploitation of non-metallic minerals in Bahia, such as Brazilian pebble, talc, marbles, etc., is mainly to be found in the inland zones (many of them in the micro-region of Juazeiro) and is of a craftsmanship character.

The following process factories of these resources have plans of installation in the Industrial Centre of -- Aratu.

Stage	Name of Firm	Investment in 10 <sup>6</sup>	Number of employees
Setting up	"Marmores e granitos do Nordeste"	1,2	76
Approved	"Sociedade Bahiana de talco, Ltda."	0.7	86
Planning the project	"Iguaçu, Industrial de Marmores, Lta."	0.5	76
Ditto.	"Marmores da Bahia S.A."	4.0	53
	TOTAL	6.4	291

These figures point to the fact that these lines of production are receiving sufficient attention.

### 2.5.3. WOOD AND FURNITURE

#### Fine woods

#### Introduction

The necessity of studying the present level of utilization of the exceptional forest resources in Bahia in fine wood, mainly 'jacaranda', was clearly pointed out in the preselection.

The survey consisted mainly of visiting two lumberyards, one in Ilheus and the other in Salvador who work -- with lumbers from the forests in the Extreme South of the State.

#### Present situation

Although the survey was obviously incomplete since no visits were made to forestry works (defficient access made the visits practically impossible, especially when the rains cut off the ordinary communications in the South of the State, causing flooding) it was possible to see a certain number of structural basic problems.

To begin with, these resources are not evaluated, and there is no classification nor cubage of existing species which are unknown owing to their geographical distribution.

The cutting system is not appropriately carried out. There is a legal standard to reafforest proportionately.

identical to the cutting, but, it looks that this standard is not always observed with care. Transport problems exist because of the inaccessability of the approaches; and the team from the felling firms is inadequate as are - and this is more serious - their procedures.

### Processing and marketing

The lumberyards visited had modern equipment of great capacity; however, the managers reported very definitely that such a situation was really exceptional in the State, where lumberyards with very precarious installations were dominant. The lack of financial means makes the drying of the wood more incomplete than normal. Finally the sawyers alluded extensively and in great detail to the fiscal problem, especially to the point of State imposition, which, according to them, put them in an inferior position with respect to their competitors from other neighboring States. The result, according to them, was that industry in these States was the true beneficiary of the precious wood resources in Bahia. Evidently, the lack of good communications in the Extreme South, the main zone given over to forest resources in fine wood, plays an important part in this last problem

Fine wood is used as much in the making of luxurious furniture by craftsmen as in the form of a noble auxiliary element in buildings: floors, skirtings, girders, partition panels, etc; sales in markets outside Bahia are still almost unknown.

### Conclusions and recommendations

The overall impression obtained in the survey carried

out is that, at present, the valuable resources in Bahia of jacaranda and other fine wood are being physically wasted as much because of a deficient exploitation of the forest as because of an even more inadequate marketing.

We think it is justified, as a really urgent matter, to conduct a study of the whole rational exploitation of these high quality forest resources; said study should -- comprise the entire process of its use; felling, forest exploitation and its dependents, lumberyards, manufacture and marketing, (preferably abroad). The result of such a survey should be a policy which duly values and preserves these exceptional forest reserves in the State of Bahia.

### Furniture

#### Introduction

The very small percentage represented, according to statistics, by the production of furniture in Bahia, is a clear sign that the State imports furniture from other -- States, considering that however low "per capita" consumption is, local production is quite insignificant. This circumstance decided, in the preselection, the convenience of investigating this line, specifically clearing up the reasons for these imports.

The investigation carried out comprised the visiting of a total of 11 manufacturers; two in Feira de Santana, one in Itapetinga, four in Salvador, three in the Industrial Centre in Aratú and one in Ilheus.

Actual situation of the sector

The first fact discovered in the investigation is -- that the low figures for total production can be attributed not only to the low capacity of existing production, but also to the little use made of that reduced capacity which is available.

The trend of the sector is, in fact, provided by -- small workshops with very modest and hardly mechanized -- equipment, all of which want to undertake the manufacture of stock furniture; but lacking financial capacity, with permanent difficulties for working capital (which is -- translated to deficiencies in drying and general insufficiency of Stocks in terms of massive production) and with very few possibilities for plans and new models.

Efficiency of the manufacturers in the South

In these conditions industry in the South, which is technically, financially and commercially very well off, competes favourably in the market of Bahia, absorbing the greater proportion of sales (excluding the market for very high or very modest quality handmade products).

We have included the case of firms which commercialize furniture made in the South, and, encouraged by the profits of these transactions, have promoted factories in the actual State, although they have not yet received positive results because of deficiencies in the coordination of the phases of financing, marketing and the launching of production with suitable techniques.

Conclusions and recommendations

Even when some problems of supplying raw materials to the furniture industry are being resolved in Bahia with the new plants of prefabricated goods and timber (Novopan, Mavasa, Madepan, etc.) and this should automatically contribute to the development of this sector, we should not assume that this development will take place as a result of the defects in structure observed in the same and noted earlier.

In our opinion, concerning the manufacture of wooden furniture in Bahia, it would be better to carry out a -- task of restructurization than promote the implantation of new industries, for this could contribute to heightening the crisis of those already in existence, and the problem of misuse of the productive capacity would be perpetuated, an undesirable state of affairs in an undeveloped area and one which could doubtlessly be eliminated through an act of reconversion, taking advantage of the existing human and material elements, and at the same time passing on to the sector the necessary competitiveness and progressive spirit.



#### 2.5.4. RUBBER ARTICLES

##### Introduction

The sector was chosen in the first preselection in accordance with the State's existing natural resources, with the future possibilities afforded by the Petrochemical Plant being developed and with the demand of the local and North-east market for 'used' tyres, which was the origin of a relatively strong retreading industry.

##### The present situation of the sector

This field comprises some 20 tyre retreading shops with an average of 10 workers per establishment. Half of these are in Salvador while the rest, with an average of 7 workers, are in the interior of the State.

Besides these, three other installations manufacture 'Camel back' and laminated rubber, rubber and surgical -- products. The latter supplies 70% of the Brazilian market and is exported to several European and South American countries.

Likewise, there are two projects for the manufacture of tyres, inner tubes and rubber products and inner tubes and 'Camel back', respectively. Some 12 million dollars would be invested into the former project.

##### Problems noted

The two above-mentioned projects have been a stimulant to the sector as far as the basic lines of tyre and

tube production are concerned.

On the other hand, the production of technical rubber products, save those for surgical use, shows no appreciable development at present, owing to the problems caused by the factories' lack of confidence in the local products and the shortness of floating capital and technical assistance. This lack of technical assistance does at times prevent the manufacture of new products through lack of -- know-how which, due to the cost of the limited series in demand, is difficult to obtain.

#### Recommendations and conclusions

It is difficult to establish the availability of raw material (estimated at 10,000 tons per annum) with respect to the four large groups which consume 75% of Brasil's rubber. This country imported 29,000 tons in 1968. Two of these groups also control half the rubber by-products in the country.

However, it is felt that this sector shows opportunities for development, although it would be easier to carry this out if the important firms in the South were to be decentralised. It is for this reason that an analysis of this sector is recommended.

The products which would apparently show the greatest opportunities for development are those related to the -- shoe industry, a survey of which is also proposed, technical products (which require the installation of a firm -- with know-how), pressed sheets, pipes and hoses and sport goods.

## 2.5.5. LEATHER, HIDES AND SHOE INDUSTRY

### Leather Tanning

#### Introduction

Leather tanning was included in the preselection for several reasons. On the one hand, it must be taken into account that Bahia is a State with a strong production of hides because of the wide-spread cattle raising. On the other hand, only a small part of this production is manufactured in Bahia. Besides the cattle sold "a pe" to other States, Bahia mainly exports uncured hides thus reducing the possibilities of manufacture in the State.

Apart from the usual indirect investigation (bibliography, statistics, "Printer" cards, etc.) three tanning factories were visited during the course of the survey; one in Salvador, another in Juazeiro and another in Jeque.

#### The Present Situation of the Market

Brasil has a serious problem in relation to its leather and hide production, which is: the interference of interests among the different manufacturers and dealers. The case is that although production is high, it is not high enough to keep those in the sector kappy. In other words, if Brasil were to intensify its leather manufacture, the exporters of uncured leather and hides would surely protest; if she were to give in to the wishes of the exporters, this would lead to a lack in raw material for

the industries producing leather articles and for the export of untanned leather; and if she were to satisfy the demands of the foreign market for untanned leather, the exporters and consumers of cured leather would be without supplies.

Theoretically, it would be easy to point out the way towards maximum transformation locally, but in practice it is not so simple since there are different interests which bring with them pressures and counterpressures on the administration, while the hesitation of the latter -- disconcerts all plans. Recently, a crisis in the shoe industry and a policy of development not discriminated from exportation (which in fact favours the export of raw hides) has been worrying the leather tanning industry.

#### The offer

The main leather tanning production is in the industrial zones in the South of the country where the hide -- transformation industries are sited. This is quite logical with respect to the market and with respect to the widespread cattle raising in the South.

What is not so logical, however, is that this main nucleus should be almost "exclusive". It absorbs the resources as well as the final market for processed goods from the Northeast since the double transport of the hides and the processed leather is not economically justifiable.

From the visits carried out, it has been deduced -- that the leather tanning industries in Bahia are not com-

petitive, however, with the great tanning industry in the South in spite of the fact that they are favoured with re-  
gards to transport. On the one hand, the factories in Ba-  
hia are small, equipped with old machinery and the methods  
used are too traditional. On the other hand, taking into  
account that the hides from the South are only a part of  
the industry in the South and that its sales of converted  
leather is only a small percentage of its sales, it is ob-  
vious that the manufacturers from the South could cause a  
serious commercial competition on new high-level in the  
North.

#### Conclusions and recommendations

In view of this, it could be concluded that the pro-  
motion of the tanning industries with adequate and up-to-  
date methods in the interior of Bahia has its possibili-  
ties and its drawbacks. The local market is small but the  
re is the possibility of selling leather instead of raw  
hide to the South. The possibility of exporting abroad is  
obvious. Countering these positive aspects and the abun-  
dance of resources, is the lack of a defined policy to-  
wards leather and hides and the financial and commercial  
strength of the industries in this line in the South.

We believe, however, that the balance falls in favour  
of a more thorough investigation in this line of produc-  
tion during the later stages of this project.

#### Special skins

The Bahia production of wild animal skins stands out  
with respect to the 'mato cat' among the mammals and the  
lizard among the reptilians, since Bahia holds about 20%

of the total production of the country of both species. The Bahia production of deer skins is also relatively important and is about 9% of the whole output in Brasil.

On the contrary, 'Jacare' skins, which are particularly valuable, forms a very insignificant part, 1 or 2 out of every thousand caught all over the country.

The information received from the tanning industries of the inland, especially in Juazeiro, points to the fact that at present the marketing of these special skins is orientated mainly at Rio de Janeiro or Sao Paulo due to the appreciable amount of visitors from abroad, tourists or business men, in those developed areas, as well as the local market. So, the skins are sold uncured to the dealers in the South who tan and sell them in guaranteed condition and prices to the buyer.

This guarantee which is essential, especially when selling to those from abroad, is lacking today in Bahia, but the development of this aspect could be of interest -- not only to the modest industrialization but also, and -- most particularly, to touristic development which is highly possible in Bahia.

It should be noted that an increase in tourism -- would open new ways for business dealt with in this section.

In accordance with what has been examined and set -- out, it would be of interest to analyse the viability of a small organisation which, after collecting the skins of

wild animals from the inland (mammals and reptiles), would proceed with the tanning. Sales would then be effected -- through the usual channels to the South, through an establishment formed for this purpose in Salvador which might be a branch of a well-known firm from the South or a delegation or exclusivist in Salvador for the manufacturer of skins from the inland, or a state craftmanship shop.

### Shoe Industry

#### Introduction

This line of production was included in the preselection because it was felt that as soon as the above-mentioned problem in leather tanning industry was solved, this line would be given an appreciable stimulus.

Direct investigation showed the convenience in analyzing this line because of its relation - as far as raw materials are concerned - to certain present or potential - State productions, and as the consequence of the importance which a market of 7 million inhabitants has in spite of the small consumption "per capita".

#### Present situation of the market

Annual shoe sales in the State of Bahia could be estimated at 2 million pairs at the least, even taking into account the low number of buyers among the population. Today, this market is almost exclusively supplied with shoes

imported from the South, since existing industries are -- small looked at individually or together. In the Indus-- trial Centre of Aratu, a shoe factory has been recently - set up. This factory manufactures around 450,000 pairs of plastic shoes for children per annum. Another plastic -- shoe factory for adults is at the moment being installed also in Aratu and produces around 575,000 pairs per -- annum.

#### Prospects for the near future

It is obvious that the above projects will not absorb the Bahia market, especially if sales per inhabitant in-- crease and besides this, Bahia can count on excellent -- prospects for raw material for this industry: skins (whi- le the tanning industry, as explained above, is to be de- veloped); natural rubber and in the near future synthetic rubber and plastics.

It would appear feasible for the shoe industry to -- reach a certain degree of development without having to resort to large investments, if the above is taken into account as the starting point and during the first stages an abundance of cheap labour would counter the need for a high degree of mechanisation.

#### Recommendations

According to what has been set out above, it would be suitable to advise that during the second stage of the Project market research in the shoe line in Bahia be ca-- rried out, also the study of implementation in this line of manufacture in some inland points of the State.



## 2.5.6. FIBERS, TEXTILES AND CLOTHES

### Textiles and Clothes

#### Introduction

This sector, seen as a whole, was preselected because of the possibilities shown by the contact with the petrochemical plant in development, the existence of a clothes market supplied today mainly from the south of the country and the abundance of labour in the clothes industry and the small amount of inversion.

#### Present situation of this line

Leaving aside the process of textile raw material -- and the production of hemp and jute fibres and their by-products, the State's textile industry has six factories in operation with a total of 3,000 workers. Three of these factories are in Salvador and manufacture cotton thread and cloth. Besides these, there are three projects, at the setting-up stage, for the production of polyester fibres (short and continuous), nylon thread and cloth and cotton (poplin) cloth, respectively, while another factory manufacturing cotton thread and cloth is being enlarged. All of these represent an investment of over 20 million dollars. Two more projects for unspecified textile products are being studied and likewise, polypropilene products, which will represent an investment of another 6 million dollars.

With respect to the clothes industry, 25 factories, with a total of less than 900 workers manufacture mainly

men shirts, suits and trousers and children's clothes. 13 of these factories are in Salvador and have around 300 -- men.

Likewise, another project has been aproved for the manufacture of socks and stockings for men, women and -- children. The cost of this project is around two million dollars.

#### The characteristics of the market

Serious difficulties are foreseen in the sector, above all in the ready-made clothes industry where are problems of floating capital caused by the lack of finished raw material in the State and other problems caused by -- the low productivity of the local factories compared with that in the South and the apparent difficulty of competition caused by the lack of partial exemptions from the ICM tax afforded by the State. From the tax point of view, this situation allows the products from the South placed on the Bahia market to have a lower production cost than the local products which supply home demands. Besides the other advantages which the South can count on in its competition, which have been mentioned above, it supplies approximately 80% of the local demand in the State.

#### Actions to be carried out

In the ready-made clothes industry, it is considered necessary to pay attention to the problems caused by the ICM tax. It would appear that the rest of the Northeast States enjoy exemptions from this tax. The problem affects mainly to the small industry in the inland which manufac-

tures mainly products of lower quality and which lacks -- floating capital.

Summary and recommendations

The sector is complex and for this reason a study is recommended in order to attempt the co-ordination of the different stages of production and to eliminate problems such as the lack of a finishing industry (dressing, bleaching, dyeing and printing). This problem results in the sending of fabrics produced today in Bahia, or foreseen in the near future, to the South to be later returned.

Likewise, it will be necessary to analyse formulas in order to provide floating capital, technical assistance and a mutual cooperation with the small ready-made clothes industry in the inland as well as the convenience of a possible partial exemption from taxes if this should prove necessary.

This analysis is going to prove difficult to carry out, not only because of the implications at country level and the federal control under which the textile industry finds itself, but also because of its dependence on the planned petrochemical plant and the lack of facts on clothes consumption in the State of Bahia, with respect to the different fibres and in the rest of the Northeast States and in Brasil generally.

With respect to the incidence of the proposed analysis on the development in the interior of the State, it does not seem logical to assume that the new industries

of relative importance, which might prove necessary in -- this line of production, have a particular interest to be sited in the interior of the State. A study could be carried out, however, of the difference in costs should a -- factory be established in the inland and thus the advisable compensations could be worked out.

### Leaf fibers - particularly hemp

#### Introduction

This line was preselected because of the availability of raw material in the area. Two very representative factories in Salvador and Vitoria da Conquista were visited during the course of the survey.

#### Present situation of the sector

Keeping in mind the general world-wide trend to substitute these fibers for nylon and other artificial fibers in their specific uses (sacks, ropes and string, etc.) it could be said that the Bahia leaf fiber industry is at -- present going through an excellent stage.

The main fact is that the supply of raw material is abundant (crops planted 6 or 7 years ago are being harvested). On the other hand the present low prices show the inconvenience of planting more crops and within 7 or 8 years there will be a sharp decrease in the supply of raw material. The life of these plants is about 15 years.

The factories, however, are expanding because of the

encouragement given by the competitiveness of the low buying prices of raw materials.

#### The market

In contrast with this optimism, clearly observed during the interviews with the Bahia manufacturers, figures obtained from the 1969 edition of the United Nations statistics annual, show that the production of thread from textile fibers, except cotton, in 33 main manufacturing countries had shown a decrease to 1.3 million tons in --- 1963, while it had increased to 1.3 million tons in 1961 and to 1.5 million tons in 1964. Such figures reflect a clear slump in each country and at times lead to coordinated action among the firms concerned to gradually close down factories, as has occurred in Spain.

#### Conclusions and recommendations

Under such conditions, even though there is raw material available and the necessary technological know-how, obviously encouragement in this line of production is not to be recommended when taking into consideration the long term prospects which depend on the innovation of new applications for the fibres.

It would seem unwise to take steps in this direction before the new lines of use have proved their possibilities. The assurance of success is of utmost importance in a programme such as in this case.

In the meantime while the feasibility of such new applications has not been analysed, any increase in the ca-

capacity of production would only make the crisis more acute. It would seem that this crisis might occur within the next 7 years when the present excess of raw material no longer exists.

Besides this, certain new applications are already being tested in the State of Bahia, the most notable of which is the project planned by "Bahiana de Celulosa, S.A." which will obtain 100 tons of cellulose per day -- from hemp in 1972.

On the other hand, the action promoted by Brasil at present with regard to the creation of an International Research Center for leaf fibers, is positive. This was dealt with in the advisory subcommittee of leaf fibers of the F.A.O. (Rome, October, 1970) since it was felt that this is the only way to solve the problems of this subsector.

## 2.5.7. CHEMICAL INDUSTRIES

### Basic chemical Industry

#### Introduction

The sector was preselected in order to establish its possibilities, mainly with regard to natural resources of the State of Bahia and to the chemical industry needed to support the developing Petrochemical Plant.

#### Results of the survey

It is evident that the development of a basic chemical industry requires the availability of its raw minerals, unless local demand of a chemical product is so high as to make the transport of said minerals economically -- feasible with regard to the high capacity of the production unit.

The State of Bahia has not basic minerals, since resources of sulphur and potassium minerals are unknown, at least in large quantities. Even the crudes have a low sulphur content. As far as phosphorus and rock salt minerals are concerned, there is a small measured reserve of phosphates in Itambe and certain possibilities of rock salt in the Itaparica Island and West coast of All Saints Bay. For this reason, an increase in mineral prospecting must precede any development in this industry by the State.

In spite of this lack of basic elements, a very im-

portant project is under analysis for the production of caustic soda and chlorine, even taking into consideration the high costs of transporting sodium chloride which is the basic raw material in this line of production. This project, with a cost being estimated at 37 million dollars, will cover the demand for chlorine in the petrochemical plant. At the same time, it is necessary to keep in mind the necessity for great coordination to avoid the possibility of not being able to place the foreseen production of chlorine on the local market, although the present demand for soda is high in Brasil. This would cause very high production costs in soda because of the difficulty of transporting the chlorine.

In the meanwhile, chlorine could be supplied at lower consumption levels by another company in operation on the outskirts of Salvador. This company has a much lower capacity than the new plant now being considered but still has to send part of its chlorine production into the atmosphere in spite of the danger implicated. The company is trying to arrive at an agreement to produce chlorinated solvents from propylene as well as promoting the manufacture of industrial fact alcohols, obtained by hydrogenating vegetable or animal fats in order to be able to supply those consumers the hydrogen which is also partly sent into the atmosphere. In order not to poison the catalysts, this would require the demercurisation of the hydrogen from the soda plant and which is contaminated by the mercury from the electrolytic cells.

The rest of the present chemical industry in the State comprises mainly, apart from the vegetable and animal resources, the production of sanitary water, asphaltic --



emulsions (water-proofing), vaseline, inks, nitrogen and oxygen, formol (for the agglomerated board industry), and titanium dioxide. The latter is at the moment the most important plant of the sector in Bahia because of the amount of the foreseen investment, 21 million dollars and its -- economic incidence all over the country.

Still under analysis, there are projects for the manufacture of barium salts and other chemical products with an overall cost of about 6 million dollars which gives -- them possibilities for the future.

#### Action to be taken under the circumstances

The promotion of further mining research in the State would be advisable and in the case of this being carried out, the installation of the new chlorine and soda industry, which is necessary for the future petrochemical plant, would be recommended.

#### Recommendation and conclusions

A study of the sector is not recommended for the moment. It is felt that the possibilities of development would depend on the results of the prospectings made in the mining sector as well as the demand of the future petrochemical plant, which is at present beginning to be -- fitted.

It is possible that small possibilities for short-term development do exist for the Chemical Industry of Bahia, mainly as far as the manufacture of citric acids and proteins by means of fermenting molasses is concerned, and the industry of fertilizer mixture and the less obvious

possibility of manufacturing aluminium chloride from bauxite and chlorine, or from aluminium and chlorine taking advantage of the aluminium production which the State is soon to count on. The latter product is used mainly as a catalyst. The project, at the moment under study, for the manufacture of 1,000 tons per day of ammonia from natural gas is also very interesting.

### Petrochemical Industry

#### Introduction

This sector was included in the preselection in order to see what its prospects of development are like within the general plans for petrochemical development in Brasil and its incidence in the industrial development in the -- State of Bahia.

#### Results of the survey

The studies already carried out by the State with regards to the availability of local basic raw materials, i.e. Petroleum and Natural Gas, for the development of a large petrochemical plant, show the large possibilities of a petrochemical industry and the convenience of establishing Brasil's second large petrochemical centre in -- Bahia.

Attracted by the above-mentioned natural resources, the fiscal and financial incentives and the future possibilities of the plant, projects relating to the manufacture of lamp black, fthalic anhydride, methyl methacrilate, octanol and n-butanol, melamine and polypropilene, have

been established or are being installed or have been approved, apart from the line of production of PETROBAS. These projects, including PETROBAS' plants for propylene, ammonia and urea, will represent all together, a cost of over 50 million dollars.

Also under analysis are projects for the manufacture of ethylene, methanol, styrene and polystyrene and being put forward are plans for obtaining methane, benzene and toluene. All these would represent an additional cost of about 60 million dollars.

#### Analysis of possibilities

The petrochemical problem clearly cannot be looked at from a purely State level since its general implications fall directly on the whole economy of the country.

Likewise it is clear that the installation of an efficient combined petrochemical plant with its economy derived from this integration (from the mutual advantages of products and by-products, due to the elimination of unnecessary and often expensive transport, and with the possibility to obtain common side material produced on a large scale) will require the availability of basic chemical material, such as: methane, ethylene (now manufactured in Brasil mainly from ethyl alcohol), propylene, butylene, benzene, toluene and xylenes. The State of Bahia is in better conditions than any other State in the country for the setting of this plant because of its Natural Gas and Petroleum resources.

Owing, perhaps to problems of a national character, production of most of the above mentioned raw materials has not yet been started and not even approved. Only the

foreseen production of octanol and n-butanol, melamine and polypropylene will be able to count on raw material, propylene and urea, in the area. It is clear, then, that the above mentioned basic raw materials will be needed urgently for the development of the petrochemical plant and -- that the lack of these is delaying the development and -- probably causing Bahia to lose its possibilities in the manufacture of by-products, such as polyethylene, PVC, -- etc., which should be within their grasp in view of the abundant oil and natural gas resources.

Also it should be pointed out that this plant will affect the developing textile industry in Bahia and others such as: resins, plastics, pharmaceutical products, detergents, paints and varnishes, pesticides, herbicides, etc., all of which, according to the 1968 statistics, are imported by Brasil. Most of them could be manufactured in Bahia in view of the raw material available and the large planned soda and chloride industry as well as other resources available locally which would allow a supply of raw materials being auxiliary of the petrochemical.

The petrochemical problem is complex and requires -- the necessary national coordination to avoid that the fitting of oversized or undersized units, especially where products which are expensive and difficult to transport are concerned, causes serious financial problems or the stifling of the future plant, today only at its beginning.

Action advisable under the circumstances

It would be advisable to hasten the coordination, signing and approval of the plans regarding the manufacture

of the basic petrochemical products: ethylene, benzene -- and toluene, taking care that, at least as far as ethylene is concerned, the planned production can be used locally by manufacturers of side products, thus reducing as -- much as possible the under-usage of the design capacity or the necessity of expensive and difficult transport.

Summary and recommendations

It is clear that the extent of the sector and the future possibilities and its implication in the general economic policy of Brasil do not come within the limit of -- this survey's recommendations and doubtlessly the possibilities of the plant are being studied by competent bodies.

Likewise, it is too early to recommend a survey of - the possibilities of developing another petrochemical -- plant still not designed in the interior of the State of Bahia. Probably such development will be confined to the geographic axis Salvador-Feira de Santana and the Reconca vo area, more or less accentuated, and round the geogra-- phical area of initial development: Aratu, Camacari, Candeias.

Later in the future, the requirements of auxiliary industries and natural resources will doubtlessly affect appreciably the development of other areas of the State - further away from Salvador.

Soaps and DetergentsIntroduction

This line of production was preselected in order to find out the possibility of manufacturing higher quality soaps and to what extent the petrochemical complex will affect the synthetic detergent production.

Results of the survey

The sector of soaps and liquid detergents in Bahia - comprises around 25 firms with an average of 15 workers. All of these firms are spread around the interior of the State. Another six firms with an average of 8 workers -- each manufacture sanitary waters by mixing its components.

The survey carried out showed that the sector has difficulty with the competition from the South offer, at -- least in connection with Salvador market, because the -- small series manufactured in Bahia does not allow the necessary investments to be carried out for the stamping -- process and also because of the lack of suitable advertising.

Summary and recommendations

It is felt that the production of soap bars does not merit expansion owing to the fact that, as the income per capita rises, consumption of this product falls.

With respect to synthetic detergents, the two basic requirements for development are non-existent in the State. In other words, there is a lack of both necessary raw materials for production and market. The low income level in the North east prevents development in this line through lack of domestic appliances, and even though demand were higher, supplies of these products are carried out by a few firms which control the world market because of their great financial backing and the advertising media used and this makes it difficult to introduce a product in the market.

Further in the future, interest in the decentralisation of some of the large firms established in the South of the country by means of special incentives might be -- aroused. This would appear more feasible once the petro--chemical industry is in conditions to supply at least a part of the necessary raw materials.

The same conclusions could be applied to the production of toilet soap, since the market is small and very much controlled.

The production of liquid detergents shows little -- prospects mainly because it is a product that can be more easily adulterated, therefore acceptance would be almost nil, except from commercial firms very well known.

2.5.8. MINING, METALLURGY, SIDERURGY AND METAL PROCESSED  
CCCL

Mining

Introduction

The existence in Bahia of important mining resources, some of which are already exploited and others having been found and studied and with economic possibilities, constitutes one of the main reasons for industrial development in the inland of the State where such resources are to be found.

In fact, these resources could and should lead to -- the installation of a basic industry and eventually to a process industry near the sources of raw material. Transportation costs would thus be reduced because of the dealing with more valuable products; wealth and demand for labour would increase and other industries in connection with these products as raw material would be encouraged.

Bahia has a rich and varied resource of metal minerals, but with regard to this survey, magnesite, lead, chromium and copper must be underlined, owing to the contacts established with firms which exploit each of these lines.

In accordance with this criteria and with regard to the carrying out of full survey from the extracting stage to the most advanced processing stage, visits were carried out in the mining areas and two copper extracting firms,



two chromium, one magnesite and one lead were contacted. All of these are in the Senhor de Bomfim, Campo Formoso and Juaziro area.

Present structure of production and the market

All the extracting industries contacted as well as the other more important mines are joined with industrial groups who take on the first process. Therefore market and selling problems do not exist and on the other hand, these products are in rising demand, nationally as well as internationally.

The basic difficulty lies in the transport of the mineral to the metallurgic industries all of which are far from the fields.

The magnesite has to be transported from its deposits in Brumado and Santo Se to Belo Horizonte and Sao Paulo, by river way, lorry or rail with the consequent transfers. The lead is sent from Boquira to Santo Amaro covering 1,000 kms and part of the chromium is sent from Campo Formoso to Sao Paulo and part to the Reconcavo for the iron alloy plants.

The most serious problem is that of access from the main net of communications (rail or road) to the deposits. The mines at Santo Se are completely stopped during certain seasons of the year when the only way of transporting its production is down the San Francisco River. This same

problem of access from the mines to the main net, which is common to nearly all the mines, also affects the copper mines at Juaraguari.

Development of these extracting industries seems to be correct, although exploitation could doubtless be -- greater, in view of the amount of the reserves found and those still to be detected. But this would mean solving the difficulty (apart of infrastructure problems) caused by the lack of professional miners, at technical level as well as engineers and intermediate posts. The greatest -- problem observed during the visits to the mines, with regard to internal working, was the lack of technical personnel. Likewise, the general level of education of the population where labour is recruited is insufficient, although the population is generally alert and easily adapted to mining, the lack of professionals in the middle grade will cause a stifling in the industry.

#### Conclusions and recommendations

The mineral extracting industries in Bahia are at -- present at a good level of development within a policy that gives preference to the home market. This policy could -- perhaps be surpassed, although the stage of exporting raw minerals would be difficult to exceed which would lessen the attraction of intensifying the mining industry.

The most serious problems in the mines which are already working or are about to work, are the transport difficulties and the lack of intermediate personnel and second level professionals who are sufficiently qualified.

Taking into account what has been set out above, it is felt necessary to recommend the following:

- . It would seem convenient to promote the mining research, coordinating the different establishments connected with this today, just as was pointed out when studying the mining resources in the State. This systematic survey is indispensable for the establishing of a mining policy and for the analysis to see whether or not the extraction requires to be strengthened.
- . A solution to the lack of second level professionals must be quickly found. The problem is so acute as to justify the importing of temporary personnel, while at the same time appropriate training centers should be set up.
- . An economic analysis of transport costs incurred at present owing to the lack of access to the deposits, should be carried out. It could investigate the necessity of creating such access by means of new secondary roads or by constructing new branches to the railway.

MetallurgyIntroduction

It is difficult to draw the dividing line between Mining and Metallurgy. While referring to one, almost inevitably the problems and characteristics of the other must be alluded to. -

Thus, some of the basic problems in Metallurgy, being common to the mining industry, have already been analysed, e.g. transport problems. The necessity of building ways of access to the deposits has already been commented on in the last paragraph. The remarks made in the infrastructure study are also applicable in this case. This relates mainly to railways and the necessity of modernizing some of the ways so that they afford the minimum conditions for traffic.

Another aspect which has already been considered, is the limitation of the present mines to the home market, which does not exclude a certain amount of export, mainly iron alloys. In connection with this point, we would repeat the remarks regarding the need to promote the mining survey before coming to any really ambitious plan in the mining and Metallurgy in Bahia.

The inadequate siting of metallurgical plants is also a problem which must be underlined. They are all on the coastal zone which makes it necessary to transport a not yet enriched mineral over excessive distances. The

distances between the fields and the plant is 350 kilometres minimum and 600 kms maximum without taking into account the export of mineral to the industrial areas in the South.

In the case of the iron alloys and lead metallurgy, this problem will prove difficult to reconsider, since they are already working. However, in the case of the future copper industry, for which enriching at the pit head from 30% to 35% and the metallurgic installation on the coast have been projected, reconsideration of the sites would be suitable since the assumptions on which the above mentioned project was based have been altered. Even while writing it up, it was estimated that most of the mineral would be imported which would justify the metallurgic installation on the coast. But now, it must be taken into consideration that the minerals will come from the interior of Bahia and the integration of the mining and metal industry should be considered, only leaving the outer sites for perhaps the extraction of electrolytic copper, and even safer for those dealing in the final processing of copper.

#### Situation of the sector

The only metallurgy wholly developed in the State of Bahia is that of lead which yields 29,000 tons of metal at present. From the point of view of supplies, possibility for greater production is higher and it would appear that the possibility of increasing manufacture by making it more viable to the market, is being studied. Taking advantage of the galena by-products, which is not at the mo

ment carried out, is an additional problem.

There are two iron alloy producing plants, one in Pojuca, in the Alagoinhas zone and the other, which is more modern, in the Industrial Centre of Aratu. They both obtain the same products: ferrosilicium, ferrochrome, and ferromanganese, bound to the Southern industry and for exporting (mainly to Venezuela). One of these plants had quite serious difficulties because of its equipment faults of Brazilian make, but these difficulties have now been overcome and the factory is expanding its output capacity. The other plant did not suffer these difficulties since its equipment is imported. Even when the plant began not even a year ago, expansion was being thought of, as the plant was built so as to facilitate such expansion.

#### Conclusions and Recommendations

In view of the important mining resources in Bahia, sited nearly all in the inland, or to be more precise, in the mountain range called "Chapada Diamantifera" and its extensions between the Sao Francisco River and the coast, an entire and detailed reconsideration of its possibilities would be recommended as a necessity.

The greatest difficulty found is regarding the lack of previous mining prospection to determine the importance of the existing reserves and thus take the consequent and necessary steps.

These steps would start with the present planning of almost exclusive production for the home market and continue up to possibility, theoretically seen at least, of encouraging exploitation of processed products up to the mi

nimum level of metals. This would go through the intermediate solution of supplying the foreign markets with raw minerals or modestly refined.

This analysis of possible policy demands detailed research of the world market once the State's possibilities of supply have been analysed and studied to the smallest detail. It would obviously be insufficient to make an estimated survey without adequate information.

### Siderurgy

#### Introduction

As such, there is no real siderurgy in the Northeast and Bahia, and Brasil in general, although one of the main iron mineral producing countries, has a scarcity of iron and steel products. The insufficient supplies of the existing industry are reflected by the low level of consumption rather than by a small market. The siderurgical problem is beyond this survey since geographically it extends beyond its particular limits.

However, the obvious scarcity of siderurgical products in Bahia (consequence of the distance from existing industry in other regions of the country) justifies a detailed survey since it limits the development of important branches of the industry which have the possibility to expand.

#### Present structure of the sector

The steel produced in the Northeast is obtained ex--

clusively in electric furnaces from scrap iron. There is only one steel foundry in Pernambuco, which can be considered as such for its size and the general characteristics of its installations. There are also other small electric furnaces in smaller plants, among which the two existing one in Bahia must be counted.

Total output does not rise much above 60,000 tons, 4,000 or 5,000 of which correspond to Bahia.

Nearly all the steel obtained is destined for rolling with the production of rods for building and fermachine in the Pernambuco foundry and only building rods in Bahia.

No sheets are produced although demand is important and rising and the same occurs with sections of which in the future there will be growing demand, although the present market has not yet developed, in view of the trends towards steel consumption in all countries.

This situation could change substantially within a short time. A project has been approved and is being brought in to Bahia. It is the siting of an integrated plant with a starting capacity of 280,000 tons which will use the direct reduction of mineral method using natural gas. Production will be dedicated to blooms and flat products. This will be an important contribution to the industry.

This project is still not determined and there are points still to be clarified.



Even carrying out planned projects, it does not appear that they will be sufficient to end the present stifling difficulties in the market, even less when planning an accelerated industrial development. While the demand for sheets and tins is being covered by these projects, there is still the problem of supplying commercial sections as well as steel for purposes other than rolling and which should be promoted although demand would not be very high. The present industry cannot even satisfy these demands.

It is noticeable, however, that some of the present producers, more precisely the firm "Siderurgica Sto. Amaro", are willing to carry out up-to-dating plans because they can see that with technical development the market which they supply at the moment would increase greatly. The present producers have not decided to expand and improve their installations because they consider the large projects insufficiently defined, so this would call for a very detailed study of the adequate coordination of the possible expansion once the projects are working. It is possible for the integrated siderurgical plant to supply them with semiproducts or even, as a start, with imported semiproducts, but it must be kept clear which lines will be developed by this plant and those from the South, so that these smaller plants can make complementary plans to those made by larger. It all leads to the fact that a minimum siderurgical base in Bahia is indispensable for the industrial development of the State.

It is necessary, therefore, to carry out a further survey on this line of production, preferably in order to clarify objectives and to coordinate the projects which have been determined or which are about to be determined.

Forging and Founding

These lines of production were preselected because they are both closely related to the whole industrialization process small though it may be.

The plant in Santo Amaro is at present working at full capacity and taking into account the low technical level of its installations, we feel that this proves that in Bahia there is an interesting market for this production.

Sufficient forges and foundries in Bahia would make the development of certain process industries possible. These latter industries have not until now been established because of the lack of the two former.

The final industry in Bahia is generally composed of integrated lines which do not require large stocks of forged or cast parts according to specific designs. However, the working (even at a minimum) of this auxiliary industry could help bring these final industries, not vertically integrated, to Bahia, thus encouraging a higher level of development.

As a result of the investigation, an analysis of the viability of these two lines of production in accordance with the whole range of possibilities here described, would be considered necessary for the second stage of this project.

Heavy boiler forge Industry and Metallic structures

Within the different lines of production which correspond to the metal processing sector, the building of heavy boiler forge and metal structures is considered to be a basic element for industrial development.

The survey and visits to different firms in Bahia -- show that this line has basically reached sufficient development, encouraged by the creation and expansion of the Petrobras plants and secondly, by the industry in Aratu. In fact one of the firms visited is one of the five largest in Brasil within this branch of industry. It could even be said that it has surpassed the basic requirements of the State, due to demand for supplies in the past.

Industrial development would create sufficient demand for the existing plants and possibly for others. It should be taken into consideration that this line could be developed separately with much difficulty apart from the present problems which are owing to uncontinuous demand, the scarcity and high costs of raw material and the uneven -- competition among the small and large firms since the latter are able to elude taxes and rates which must doubly make a great difference to the total costs.

Hardware and manufacture of tools and spare parts

The hardware development in the State and in the Northeast generally, together with the insufficient existing industry in the South which can only supply its own market, justifies the development of the hardware industry.

Apart from four nail factories (which is the line of production represented in the State within this subsector and surely because of its higher simplicity) the only industry dedicated to hardware is a door hinge factory -- which was visited by the Techniberia group.

This contact gave the impression that, leaving aside the more complicated products and concentrating on supplies for building, this line could be developed without -- difficulty, as long as supplies of raw materials can be assured and this would be the only trouble. Big investments or complicated installations would not be required - except in the galvanizing line for some products - nor would technology or skilled labour, difficult to obtain or form, be necessary.

The prospects of the market are favourable, especially taking into account BNH's programme for building new houses.

The manufacture of tools, particularly agricultural tools, could be considered to be in close contact with -- this line of production.

There is a modern factory in Aratu, but it would seem that the market is large enough to allow higher production, and, as it happens with the hardware industry, it could be considered some decentralization within the State, since the interior offers interesting prospects for a market as shown by the fact that some workshops touch on this production rudimentarily.

This last fact proves that local production would easily be able to compete with the products imported from the South. A visit to several stores in Feira de Santana showed that the importing level is very high, since transport costs of these articles of little value are a decisive point which would facilitate development. In view of this, it is felt that production could easily be encouraged and if adequate technical and economical facilities and assistance were provided for a modest start, some of the present storekeepers, knowing this market, would be interested in the development of this kind of production.

A spare parts industry could also be developed in agreement, of course, with the main producers, but this would be difficult and it is not felt that it could go beyond the almost artisan level which it is at now.

Shipbuilding

This was included in the preselection in view of the possible development in the fishing industry.

The industries visited (one river shipyard and two sea shipyards) which concentrate mainly on the repairing and building of small boats, pointed out the fact that difficulty lies in the lack of market. Fishing on large scale is not carried out, only rudimentary methods are followed by small groups which lack capital. At present renovations are not called for and the shipbuilders do not see any probability of a change in the fishing industry unless the State Government takes decisive measures as is happening at Rio Grande do Sul: An overall study is being made of the problems in the development of the fishing industry, and the different groups engaged in the different stages of this activity, including marketing, are being made to take an interest.

The existing shipyards are quite sufficient to cover the present demands of the market. If river navigation were encouraged, this would allow the river shipyard at Juazeiro, on the San Francisco River, to use its production capacity to a larger extent provided that financial assistance was given. The other shipyards not only cover the local demand but also supply other States of the Federation.

There is no reason to recommend action in this line of production. With respect to plans on a higher scale (encouraging the decentralisation of the large ship industry in the South towards Bahia or the Northeast) this nei

ther seems to be called for, at least on a short term policy.

Other processed metal goods

It is felt that certain lines of production show possibilities for development because of the sufficiently large market and the lack of production in the State of Bahia (and in the Northeast), provided that some of the basic problems are solved, such as the lack of raw materials.

Among other possible productions the manufacture of small motors, specially for farm use, which do not require very advanced methods but do avail themselves of a built-in or close foundry line, could be mentioned. Another which could be developed is the manufacture of valves -- which could reach beyond a purely local market.

### 2.5.9. OTHER PROCESSING INDUSTRIES

#### Packaging material

The absence of cardboard and carton manufacturers for packing in Bahia, causes a very obvious problem as could be noticed during the visits to a number of industries, which have to import these elemental products from Rio de Janeiro or Sao Paulo. The lack and the higher costs of packaging causes one particular problem for certain products whose packing and appearance holds a great importance. It is very significant that those who most earnestly touched on this problem were the manufacturers of cloth and ready-made clothes who were visited during the interviews -- with users and dealers.

On the other hand, the problem is not so simple that this line of production should be recommended without more ado. The requirements of packing material is very varied, although not very numerous in each case, at least in the present degree of development of the Bahia industry. The largest consumer of packing material in the whole State of Bahia is probably the Oil Refinery Landulfo Alves, of Petrobas who pack their paraffin in 25 kilos -- cartons. Production in 1968 of paraffin from the refinery was 5,123 metric tons which would represent 205,000 cartons - a modest quantity.

In any case the projects for Kraft paper approved by SUDENE must be kept in mind. They foresee the manufacture of 3,300 metric tons of Kraft paper and the production of 52,000 paper bags and 60,000 Kraft bags.



With regard to packing of a higher quality for goods whose appearance is of the utmost importance, it will be necessary find other solutions which, in some cases, would be provided by plastics obtainable once the future petrochemical industry in Bahia is going ahead. In the case of high quality and valuable goods, the use of fine wood sheets could be studied.

We feel that since that for the moment there is no great demand for packing material and taking into account the variety of situations and necessities to be covered, it would be more appropriate to find other solutions, like those mentioned above, which could take advantage of the already or about to be available resources and lines of production, before thinking of setting up an industry where the market does not seem to offer either the size or the homogeneity desired.

#### Assembly

From the economic point of view, a very interesting phenomenon is taking place in highly developed industrial countries where production demands a high proportion of labour. Part of the operations of these highly developed industries are subcontracted out to industries with a lower level of development while counting on abundant supply of cheap labour.

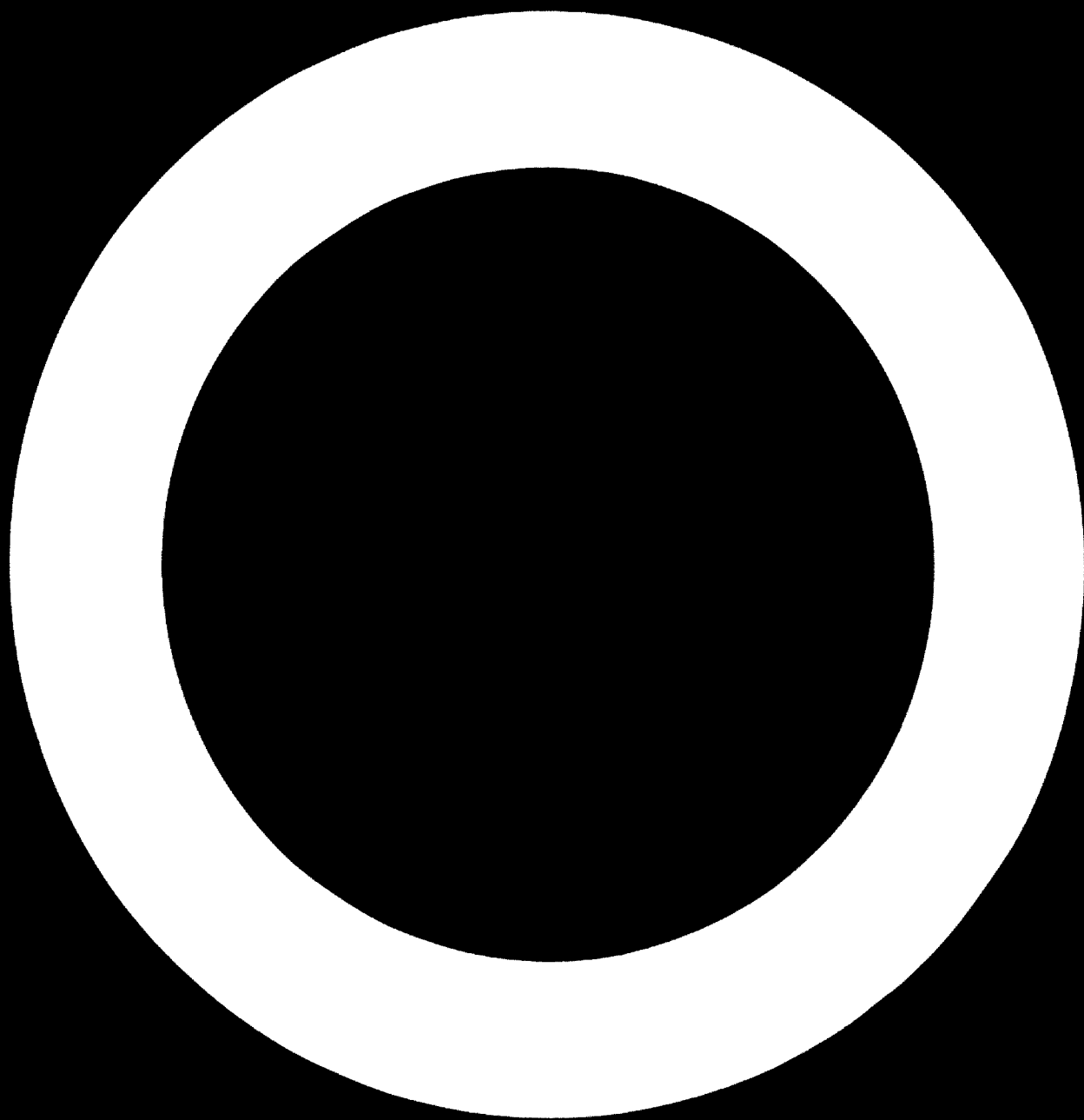
This sort of subcontracting out has occurred in the watch industry and in the assembling of electronic equipment of high precision. It has been noted that the economy justifies the very high air transport costs of the parts from the original country to the country which has been subcontracted, and back to the original producers.

It is justifiable, in the extreme cases, owing to --

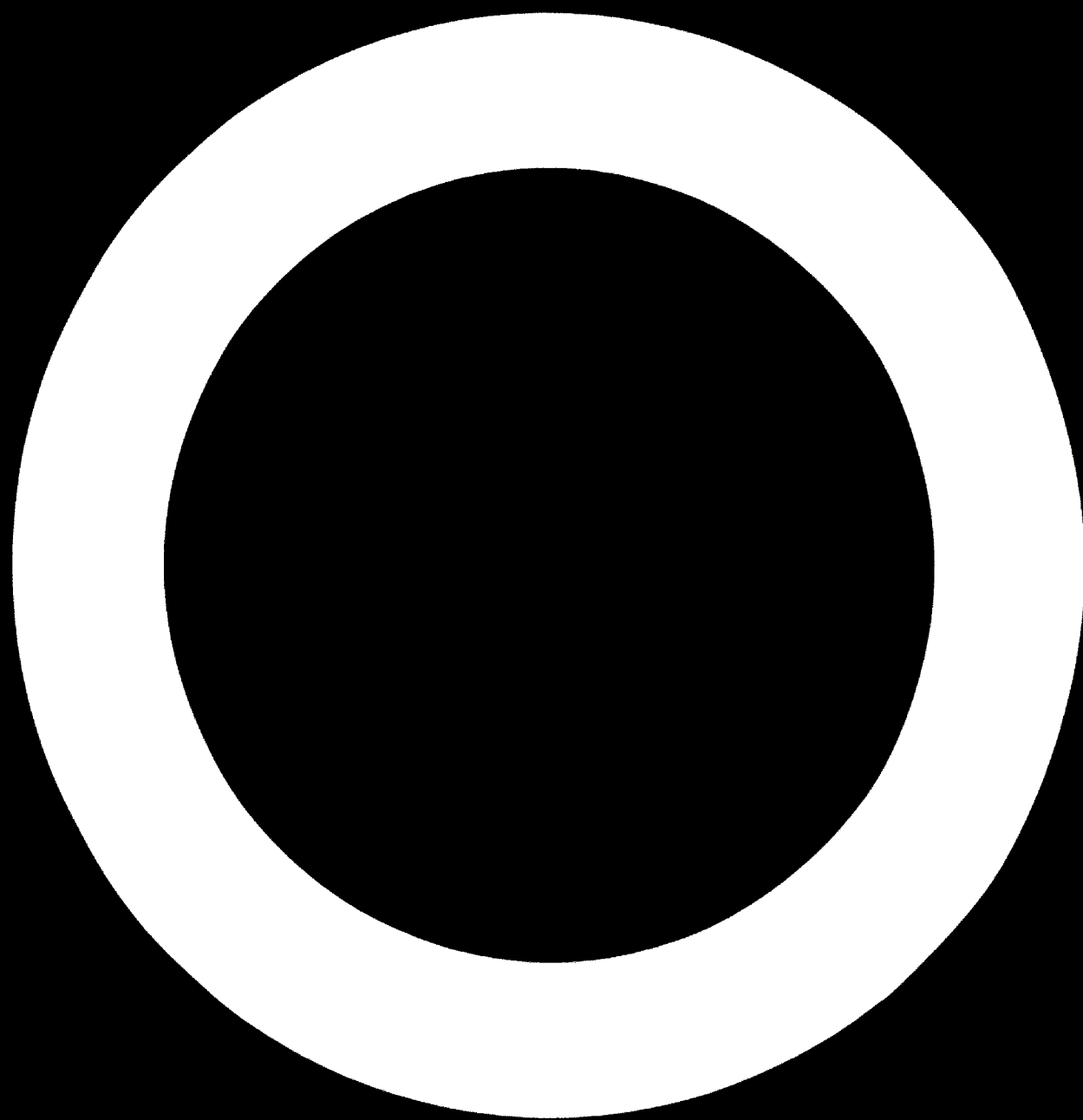
the lack of availability of craftsmen, at a reasonable cost in the producing and highly developed country. This helps to eliminate the unnecessary costs of sending or bringing people and has a favourable effect on the process of space distribution of economic progress, thus avoiding psychological tensions, individual or social, which always go with the migratory phenomena.

Evidently, there is the possibility of the State of Bahia receiving some of these subcontracts from industries in the more developed triangle in the South, since labour is abundant and cheap in Bahia and while problems of overpopulation threatens the industrial zones, mainly Sao Paulo. However, from the point of view of this survey, we would only point out this existing possibility, since the carrying out of this will depend more on definite opportunities and dealings rather than on theoretical considerations. During the second stage of the project research into the supply market in Brasil for this kind of subcontracting could be carried out. In any case, we feel that this research should be quickly complemented by other actions in order to effect these possibilities.

**THIRD PART : CONCLUSIONS AND  
RECOMMENDATIONS**



**3.1. CONCLUSIONS AND RECOMMENDATIONS**



### 3.1 CONCLUSIONS AND RECOMMENDATIONS

The survey made of the economical structure of the State of Bahia allows us to come to some conclusions in regard to the possibilities of development of the Secondary Sector in the mentioned State, the first of which being the evident fact that the primary basis of the development, taking for granted the reduced capacity it has for purchasing products from outside, should base itself in the exploitation and transformation of its natural recourses, in view of exporting them to other countries or to other States of the Federation.

Therefore, keeping within these same ideas, it is -- evident that the best and most immediate possibilities of industrialization of the State of Bahia lie in the exploitation of its mineral and petroleum resources.

The mineral resources are especially important because of the existing world market for the types of minerals that have been detected (copper especially) and because -- of the richness of the deposits in which mining has already begun. In regard to natural gas and petroleum resources, the growing need for petrochemical products in Brazil has fully justified the establishment of a large integrated petrochemical nucleus in Bahia.

One should keep in mind, nevertheless, that the term "industrialization" can not be understood only as a synonym of the creation of new manufacturing plants, it also has to be interpreted as the perfectioning of all the industrial production mechanisms available. Along these -- same lines, there are industries in Bahia backed up by -- tradition and recourses, that without a doubt possess sufficient conditions to compete in the exterior market or -- in the national market, but that, nevertheless, today -- have a relatively precarious life because of diverse --

structural defects, as much in their organization as in their equipment, financial difficulties of insufficient commercialization. There is no doubt that any industrialization program that could be established in the State in the near future should take into account these Bahian industrial subsectors, that today need to be reconverted. A few structural changes, important ones perhaps but by all means feasible, could provide considerable possibilities of medium and long term growth and expansion.

Along these same lines it is important to remember the considerations made in the respective text about the necessary organizational and commercial improvements shown in the tobacco industry; the convenience of promoting the unification of companies in the sectors that deal in the extraction of oil, the production of sugar and furniture making, sectors in which today companies abound without the adequate dimensions obtain competitive costs. And also, the suitability of modernizing equipment and proceedings, such as the completion of productive fases in the textil industry of Bahia.

× × × × ×

Considering now the problems of the promotion of new industries in the interior of the State, a subject which has been treated in the Second Chapter of this study, it is important to point out in first place some problems of generic order that have been detected repeatedly throughout the investigation, and which do not seem particular to any specific sector or line.

The first of these problems is that of financial difficulties for small and medium size companies (always forced to sell on credit, when they need to sell at least



part of their acquisitions in cash), that plants the problem of inflation, even in its actual state of "controlled inflation". This situation often turns into high financial costs that place the small company in a disadvantageous competitive position in relation to the larger company with strong financial backing.

Another important aspect, which worries a good number of small companies, is that of the fiscal differences in regard to the different systems of state taxes (and to a lesser degree, the municipal taxes) that provoke differences in the total production costs, according to the location of the industrial plants. Actually the most criticized tax in this sense by the Bahian industries (not only for creating difficulties in regard to their competitors from the South but also in some cases, in relation to the others in the Northeastern State) has been the "Imposto de Circulação de Mercadorias" (ICM).

Finally, it is necessary to bring up the problem of the slowness of the negotiation of official industrial credits, as well as the complexity of the documents through which this financing is managed and the minute details in the required controls to make these papers effective. These circumstances have discouraged to many a small company owner for whom fast help could have been perhaps just as important as the quantity. Just as it has been pointed out in the text, it is possible that this type of difficulty could be eliminated by applying the formulas of "credit insurance" that granted through official firms, would have no other objective than that of lessening the risks of private financial entities, who with their customary sagacity and operative quickness, could take charge of the material realization and the efficient control of the operations.

The importance of all these problems would justify, to our way of thinking, an investigation and studied analysis of the same in further stages of the present project.

\* \* \* \*

The analysis made of the oportunities and difficulties observed in relation to the promotion of the different lines of production in the interior of the State -- leads to the following conclusions, according to its description in section 2.5.:

a) Lines whose promotion is considered in principle as being feasible on a short term basis and which consequently have to be studied.

- Meat Industries
- Poultry Industries
- Dairy Products
- Tropical fruit preserves and canned goods
- Compound fodders
- Fine tropical woods
- Tanned leather
- Clothing manufacturers
- Mining and Metallurgy
- Siderurgy
- Forging and melting of metals
- Elemental ironworks, tools (especially for agricultural purposes) and other processed metal -- goods.
- Acceleration of the actual petrochemical projects and coordination with the basic chemical - projects related with them.
- Search for oportunities for the installation of mounting industries.

b) Lines whose promotion is feasible on a longer -- term basis:

- Vegetable preserves (depending upon the promotion of irrigated land)
- Fish and crustacean canned goods
- Sanitary earthenware
- Insulators
- Rubber products
- Tanning and commercialization of special skins
- Footwear
- Metal processed goods more complicated than those considered as immediately feasible.

Other interesting actions, though they do not directly represent the promotion of new productive lines in the -- strict sense of the word, are those relating to the coordination and systematization of mineral explorations, -- the vigilance to assure that the cement production plans are correctly carried out, the promotion for the integral use of the galena obtained in Brumado, etc.

As far as the other production lines are concerned, it is not considered necessary to begin any special action. It is thought that these lines will either acquire their own development through the forces of the market or that their promotion is not justified, except for initiatives that are assured beforehand of a strong position in the interior or international market.

X X X X

It is also suitable to refer briefly to a certain -- number of measures of global action that can cooperate in the realization of the proposed industrialization plans. Among these we should mention the importance of market --

studies as an instrument of the State's industrial promotion by way of its diffusion through suitable means; the establishment of formative programs for managers and leading personnel; the temporary employment of medium level professionals destined to determined sectors that are affected today by the lack of personnel of this type; the strengthening and promotion of medium level technical -- instruction; and the analysis of the feasibility of using warehouses for industrial supplies to be installed in one or two strategic points in the interior of the State.

X X X X

The only remaining point to be mentioned is the convenience of combining efforts in the action to be taken, especially considering the interrelations that may exist between the diverse lines whose promotion is considered feasible; it is advisable that in certain occasions the actions to be taken should be considered jointly.

A very important aspect in this concentration of efforts is the establishment of a certain order of geographical preference.

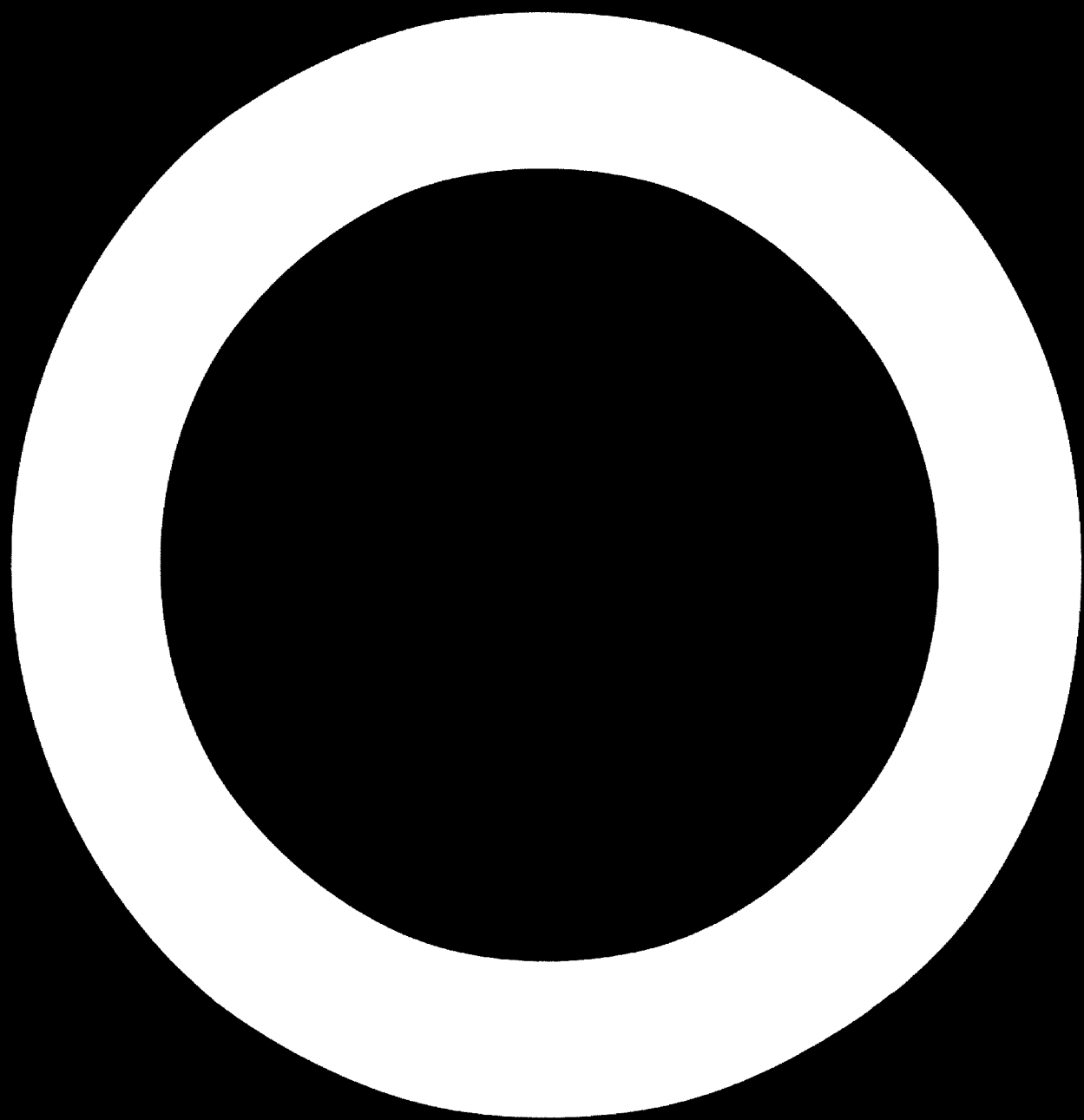
To be specific, we suggest more attention to be given to those geographical points which have the best possibilities for the introduction of new industries because of the available infrastructures that they have been or are being endowed with; as well as the attraction they have for new industries. Such is the case, in first place, of the Municipio de Feira de Santana which is endowed with favorable location and infrastructural conditions. Other

points of interest in an inicial fase could be the Ilheus-Itabuna zone and the city of Vitoria da Conquista.

However, it should be understood that the idea of -- geographical concentration of efforts should not be interpreted rigorously, avoiding in this way the mistake of a hurried or incorrect location as well as the lack of initiative to begin new projects that could come up in other locations in the interior of Bahia.

---

**FINAL SECTION : SUMMARY OF THE SURVEY**



GEOGRAPHY AND POPULATION

1. The state of Bahia has an area of 560,000 Kms<sup>2</sup> and a population of more than 7 million inhabitants. It has accidented mountains, with ranges parallel to and 250-350 kms. from the coast, and altitudes of up to 1,000 meters. From these peaks the land descends into the valley of the Sao Francisco River, then rises again towards the west some 700-900 meters.
2. Three of the five great Brazilian natural regions determine the physiographic conditions of Bahia: the humid tropical coast, the interior northeastern Sertao with little and irregular rainfall and shrubs, bushes and the 'mato' for its main vegetation, and the plain to the west of the S. Francisco River. A detailed study shows 5 natural regions in Bahia, subdivided into 16 physiographic districts.
3. A birth rate of 4.6%, a mortality rate superior to 2%, and an undetermined emmigration, give Bahia a rate of total population growth of 1.8%, lower than the average of Brazil which is 3.1%. By 1980 Bahia will have a population of 8.5 million.
4. Bahia has a young population. The potentially employable population is 3.7 million, 1.76 of which are men. The presently employed population is 2.5 million, with 1.70 million men. Of this total of 2.5 million, 2.0 million work in Primary fields; 200,000 in Secondary fields; and no more than 300,000 in Services.



INFRASTRUCTURES

5. The state has acceptable infrastructures in what could be called "developable areas", composed of the area between the coast and highway BR-116, and limited by the boundaries of Salvador, Feira de Santana, Jequié, Vitoria da Conquista, Itapetinga, Itabuna and Ilheus. In addition to this zone one must include the areas of Alagoinhas to the northeast, and Senhor de Bomfim-Jua-zeiro, to the northwest. In the rest of the state the other possibly productive areas are mostly inadequate.
6. The production of electrical power has increased in Bahia during the last ten years 14.5%, compared with the 8% for the same period in Brazil.

The source of this energy is the Hydraulic Power Plant of Palo Afonso, on the Sao Francisco River, which supplies various states in the northeast; 30% of this production was consumed by Bahia in 1969. There are also various Thermoelectric Plants, of small capacity, which provide energy in those zones where there are no transmission lines.

The cost of the electrical power varies from 0.0155 U.S. \$ per Kw./h., for supplies between 2,300 and -- 13,800 volts of 60% charge, to 0.0043 U.S. \$ per Kw./h. for high voltage with an 80% charge in the Industrial Center of Aratu.

7. The highway network of the State covers some 70,000 kilometers, with 8,000 kms. presently under construction. However, the majority of these are unpaved.

The present axis of communication in the state is highway BR-116 which crosses Bahia through Vitoria da Conquista, Jequie, and Feira de Santana continuing to the north. From Feira de Santana BR-324 joins Salvador and Capim Grosso and at this latter point BA-130 extends to Bomfim and Juazeiro.

8. There is presently under construction a second link -- between northsouth along the coast, the BR-101, which will be of great importance in the improvement of communications with the southern part of the state.
9. Highways perpendicular to the coast are BA-052 (Feira de Santana-Xique-Xique); BR-242 (from Feira de Santana to Ibotirama and Goias); paved up to Ibotirama along the Sao Francisco; the joining of Vitoria da Conquista-Ilheus, through BA-265, BA-130 and BR-415; and the connection of Vitoria da Conquista with Bom Jesus de Lapa, through BA-630, BR-030, and BA-252.
10. When the coastal highway is constructed, the network will be acceptable for communications within the "developable area", but still lacking transversal roads in good condition. The secondary highway of Recôncavo is in good condition, but outside this zone the secondary roads are very defective, even in the "developable -- area" previously mentioned. In the rest of the state the network of roads is fairly precarious.

11. The railroad system is insufficient and poorly planned in its general structure as it does not serve the large relations of the state, and inadequate in that it is excessively adapted to the difficulties of the -- land, and due to the poor state of maintainence.

In passenger traffic the suburban services of Salvador continue to be of importance, but the services of the interior are in decline. In freight service the railway assures a certain continuation of mineral traffic as well as building materials and food products, -- which, if they do not require quick transport terms, benefit from the price of transportation, of 0.8 -- cents of the U.S. \$ per Ton/Km.

12. Of the two main ports of the state, that of Salvador, with a movement of 500,000 metric tons per year, in addition to its limitations of space (being surroun--ded as it is by Ciudad Baja) suffers from a deficient organization of the managing company, which was recently intervened by the Federal Government. The second port of importance is Ilheus, which assures the exporting of cocoa in this zone. But its channel, with a depth of only 4 meters, requires the larger ships to dock in the bay and carry its load of goods out to it in small boats, with the higher costs that this implies.
13. The smaller ports and the private wharfs and piers of the state do not brighten this panorama, but result in an insufficient development of shipping transport, the same as we have seen with interior transport along highways.

14. The main improvements in shipping transport, planned or under construction, include the new terminal at -- Aratu, which in 1973 will reach a capacity of 12 million metric tons per year, with a 17 meter channel -- which will permit entrance of ships of up to 100,000 metric tons; and the new port of Ilheus, with a 10 meter channel, which will open in the middle of 1971. Likewise, the new port of Campinho, in the Marau Bay, with a 10 meter channel, will open in 1971.
  
15. New works of drainage and bouy marking are being carried out in the Sao Francisco River in a course of 1,200 kms. in Pireporta (Minas Gerais) and Juazeiro (Bahia). In the latter a new river terminal is being built.
  
16. The State has a total of 28,000 telephones, distributed in 62 cities. The area of Salvador has a total of 19,000, with another 19,000 petitions waiting to be installed by 1971. The State interurban service is fairly deficient, including between larger towns. Of the present 61 telephone offices, only 27 can connect directly with Salvador.

As for the interurban services of large cities, they are controlled on a Federal level, with acceptable conditions, by EMBRATEL.

17. In spite of the efforts of SUDENE for coordinated action in the northeast in the supply of water, the situation of this area, and especially in Bahia, leaves much to be desired. Of the 335 municipalities of this

state, only 126 have water supplies (53 of which do not purify or otherwise treat the water), which means 224,000 people drink treated water, and 110,000 do not. Efforts have been made for the provision of water supplies for the future industrial centers, as it is necessary to assure a coordination between industrialization of the interior and the supply of water for this region.

#### NATURAL RESOURCES

18. Among the principal agricultural products of the State of Bahia in 1967 are the following: cocoa (186,000 Metric Tons); oranges (317,000 M/T); hemp (93,000 M.T.); bananas (19,000 MT); Bahia coconut (171,000 MT); corn (260,000 MT); unhulled rice (72,000 MT); beans (175,000 MT); manioc (3.3 million MT); sugar cane (3.4 million MT); tobacco (28,000 MT); and, among -- other oleaginous plants, the mamona (140,000 MT).
  
19. Cocoa is obtained in the Ilheus region and its productivity is low (due to the excessive age of the plants, insufficient selection and use of the land, and the use of outdated means of cultivation). The lands dedicated to the production of cocoa are the object of an overvaluation a bit artificial due to their limitation. The majority of the cocoa is exported.

20. Also important is the exportation of tobacco leaves (primarily to Spain) and cigars (of which Germany and the United States are the main buyers).
21. Hemp is being seriously affected by the crisis in the world market of natural fibers, which has caused the Food Agricultural Organization of the U.N., through a subcommittee of which Brazil is a member, to seek and study new applications.
22. Among the vegetable extractions of the state one must mention the natural rubber, which in Bahia in 1967 totaled 3,400 M.T., or more than 11% of the production of Brazil. Other extracts of interest are the "piacava" (leaf fibers), the "licuri" (oil and wax), and the "dendé" which provides an oil useful in siderurgy, pharmacological industries, and in soaps and margarine manufacturing, and also for cooking in Bahia.
23. There has been no valuation of the forests of Bahia, whose volume of lumber represents 13% of the total of Brazil. Apparently, the present exploitation of the wealth of Bahia's woodlands has not been a rationally planned enterprise; a problem which also affects the valuable reserves of hard tropical woods - principally in Jacaranda - of the southern part of the state.
24. Bahia has abundant livestock: 8.4 million head of cattle and cows; 5.6 million pigs; 6.4 million sheep and

goats (1967 statistics). There are 15.3 million fowls, and some exploitation of horses in order to export -- this meat to Europe.

25. The climatic conditions (to which in the case of cows, only the indo-brazilian breed which produces very little milk, has successfully adapted) requires extensive rearing, with the livestock free to roam, which means a low production of meat per acre, and a tastly but tough meat.
26. The improvement of pastures in those zones which due to their heavier rainfall have abundant grass, the -- better fodder obtained from irrigated areas, the genetic improvements, and improvements in the exploitation, within an extensive livestock program can offer great possibilities for Bahia, leading to adequate -- commercialization and a strong meat industry.
27. The presence of the warm current of Brazil, and the rocky, irregular bottoms and corals, limit the possibilities of fishing in Bahia to the catch of certain quality species (tunas, groupers, etc.). Also in abundance are shrimp and lobsters. All in all, fishing here, today only a minor trade, could be oriented towards an industrialization of these expensive, quality seafoods, with an eye on the southern market.
28. Hunting and trapping in Bahia produces an assortment of skins of "mato cat", "mato pork", veado, lizard, etc. for a value of 300,000 U.S. \$ yearly.

29. In spite of the efforts of the Federal Government, -- the problem of mineral research in Brazil, has not been fully resolved, especially in regard to the coordination in this field. Due to this, Brazil has discovered what is probably only a small part of natural resources.
30. Bahia produces yearly some 230,000 M.T. of lead. Copper production now under exploitation, will soon reach the level of 70,000 M.T. yearly, due to the projects which with 120,000 U.S. \$ SUDENE has approved for the exploitation of the deposits of Jacarai. Other important mineral productions are those of magnesium (132,000 M.T.), manganese (3,400 M.T. in 1968), chrome (13,500 M.T. in 1968), and others.
31. There are abundant resources of non-metallic minerals. Limestone is found in the Bay of Todos los Santos, and in the region of the S. Francisco River. Also important are the exploitations of asbestos (116,000 M.T., in 1966) presently in the reconversion stage. Likewise, obtained are: talcum (7,700 M.T. in 1968), marble, brazilian pebble, baritine (100,000 M.T. in 1968) and salt, though in small quantities.
32. Bahia assumes also all the Brazilian production of oil and natural gas. The first provides (directly and by exchange) for a 40% of the necessities of the Brazilian market (1968). In regard to gas, it is not exploited completely due to the lack of consumption (except for the small part which is used in the production of gasoline).



INSTITUTIONS AND PUBLIC SECTOR INCENTIVES FOR THE DEVELOPMENT OF INDUSTRY

33. The Federal Government (through SUDENE and the Bank of the Northeast of Brazil, "BNB") and the State Government, offer fiscal and financial incentives for the implantation of industries in Bahia. Among the fiscal benefits offered are: a) the possibility of designating up to 50% of the sum normally paid as the tax on yearly income (in the case of the individual) or company benefits (in the case of a corporation) for investments in the northeast, and consequently in Bahia; b) the exemption of another percentage-variable according to the case of the income tax to those enterprises of the northeast; c) the exemption - in some cases, and in varying degrees - from the state tax on the circulation of goods; d) the substitution of 60% of the sum to be paid as state tax on circulation, for deposits in the "Bank of the Development of the State of Bahia" releasable through the purchase of stock in new industrial concerns in Bahia.
34. From the financial point of view, an enterprise whose project has been approved by SUDENE can obtain from 30 to 75% of the resources that it needs to develop this project, with the percentage varying according to the interest aroused by the project. On the state level, the Bank of Development aids the financing of the enterprises, especially in regard to the obtaining of circulating capital.

35. Another outstanding aid of the State of Bahia is the furnishing of appropriate and economic land for industrial sites, such as in the case of the Aratú Industrial Center, and as is underway in Feira de Santana, Ilheus and other interior centers.

#### INDUSTRIAL SERVICES

36. In regard to credit services (well attended, like the insurance service, due to the number of workers employed), and beginning with official credit services, many of the advantages which this credit could offer are presently rather weak in the opinion of several small and medium sized enterprises, because of the -- slowness and the meticulous granting process as well as the releasing and control of the financing. The larger enterprises on the other hand, are not dissatisfied with the present credit system.
37. Private banks, affected as they are by the competition with Finance and Loan Associations (which enjoy a more tolerant legal situation which allows them to concede higher interest rates to those not presently employed) tend to finance the traditional exportation of tobacco and cocoa, and other low risk operations.
38. Statistics show that the Bahian economy, in relation with all Brazil, receives a financing proportionate to its economic activity, and somewhat more intense in the case of the Secondary Sectors; but in relation with the distribution of resources according to

the size of the industry, there is an unfavorable situation for the small and medium enterprises, who are equally affected during a "controlled inflation" period due to the lack of circulating capital. The slowness of the official credit transactions can create serious problems for the smaller industries. Accordingly, it is important to study the possibilities of making this official credit more flexible through means similar to those of Insurance Credit, which would use participating private funds, with a limit of risk controlled by the Insurance mechanism.

39. In other areas of Industrial service, the transport is adequately assured through roadway mechanical services. However, the commercial services of industrial supply are totally insufficient, causing problems for the smaller enterprise, and forcing the larger ones to stock up excessively; this anti-economy hides inflation, but even so is evident from the point of view of the economy of production. Due to this, it is necessary to study the possibility of creating one or two industrial supplyhouses (of a cooperative type or under the auspices of the State of Bahia) in strategic points of the interior.

#### STRUCTURES OF INDUSTRIAL PRODUCTION

40. According to the Census of December 31, 1960, which excluded construction and electrical power supply enterprises, there were 5,980 industrial concerns in Bahia, employing 50,023 people. Of these enterprises, only 1,200 were not purely trade and craft organizations,

and only 200 employed more than 20 skilled workers.

41. The most relatively developed sectors in 1960 were -- the food industry, building materials and extraction industries with 10,000, 8,500 and 7,400 employees respectively. The textile industries, tobacco and chemical productions (including the vegetable oil industries) had between 3,000-4,000 concerns in 1960. Between 1,000 and 2,000 producers were listed for each of the sectors of wood, furniture, skins, clothing, footwear and metallurgy.
42. Analyzing the 1960 Census along production lines, the only ones with a certain development were; sugar plants with 2,000 employees; tobacco factories with more -- than 3,000; cement factory with 305; oil fields and refineries with 1,800; vegetable oil factories with 1,400; and metallurgic plants of lead and steel with 150 workers each.
43. Analyzing the progress of the last ten years, we see that the Bahian industry has expanded considerably, in part due to the action of SUDENE (which created -- 8,891 jobs in operating industries, and 15,466 more under construction, or in planning). The most progressive industries were metallurgy, transport materials, chemical production (vegetable oils mostly) and textile industries. Those with the brightest future are -- the petrochemical and metallurgical-mineral industries. The tobacco industry, with good progress, is presently having internal difficulties.

44. From the geographic point of view, Salvador is the -- primary industrial nucleus of the State, although its importance has diminished lately: in 1940 it absorbed 37% of the industrial workers of the State, a percentage which by 1965 was reduced to 25.2%. The most concentrated industrial area is that of Reconcavo and in the zones of Northeast and Alagoingas. The area of -- most intense industrial growth is Feira de Santana. Finally, the industrial evolution of interior areas such as Juazeiro, Vitoria da Conquista, Itabuena and Ilheus among others, has been mostly irregular and -- has slackened off recently.

45. Apart from the scarce development of some productions and sectors, Bahia needs reconversion and modernization in several production areas, especially in the -- fields of: tobacco, sugar, vegetable oil, and to a -- lesser extent in cotton textile and furniture industries.

#### BASIC STRATEGIES FOR THE INDUSTRIAL DEVELOPMENT OF BAHIA

46. A brief analysis of the recent economic evolution of Brazil shows an acceptable growth of the GNP, but -- with certain disequilibrium: of market, of localization of the productive capacity, sectorial and monetary.

47. Since Brazil is a country with abundant "Natural" pro

ducts, the growth of their GNP is due in part to the exploitation of new lands. This is the cause of the importance given to the Primary Sector as the center of employment; likewise the effort of construction of infrastructures of penetration of virgin lands.

48. The development of the Brazilian economy is also the result of intensive growth of industrialization. Along with this process there is the problem of inequality of distribution of benefits, with the result that at least 70% of the population lives in conditions only slightly superior to subsistence; therefore the market for industrial products is small, and the industry runs the risk of decline within the near future.
  
49. The intensification of exportation of industrial products can be an adequate manner of resolving the unbalance previously mentioned. The larger foreign sales will also cause the established industry (mostly located in the industrial triangle Rio de Janeiro-Belo Horizonte-Sao Paulo) to reduce its pressure on the supply of the interior market; this would make for the creation of other industrial centers, intrinsically necessary in a country the size of Brazil, but today impossible due to the power and pressure on the limited market by the established industries.
  
50. Not only does Brazil have a rich south and an undeveloped northeast, but it also presents strong inequalities of distribution between the rural and urban areas. The creation of new industries in underdeveloped zones, by causing the shifting of labor from agricultu-

ral to industrial fields and services can contribute to the balancing of the inequalities in the standard of living today evident in the rural and urban areas.

51. Another lack of equilibrium in Brazil is in the monetary balance. The present "controlled inflation" inevitably affects distribution and leads to the tightening of credit, and difficulties of finance and circulating capital for the smaller enterprises. At the same time, inflation provokes a considerable disorientation in the economy by favoring greatly, almost exclusively, transactions of a speculative nature.
52. For the time being, these unbalances cannot be ignored nor eliminated in a drastic and immediate form -- through economic politics. In regard to the industrialization process in the Northeast, although the southern industries may gradually increase their foreign sales, there is not a great likelihood that there will be a second integrated industrial nucleus in Brazil in the near future.
53. On the contrary the industrialization of the northeast will continue developing, especially in the production of quality items at the additional high prices, within an atmosphere of substitution of imports; or the growth of exports through the transformation of the more valuable natural resources of the area.
54. At the same time a local and regional industry can be developed in the northeast; although there might be problems with those industries, with inflationary prices which are based in the south, with branches in --

this area who would not welcome the appearance of competitors in the northeast, nor would be anxious to decentralize their enterprise.

55. Applying these principles of the future industrial development of the northeast to the data concerning the Bahian economy obtained from an analysis of its resources, its infrastructures, its services and productions, it is possible to deduce several basic strate--gies for the development of industry in the interior of Bahia.
56. Here it is necessary to point out that the opportuni--ties for heavy industry will be practically void, ex--cept for that dedicated to petrochemistry and exporta--tion of the natural resources, principally the mine--rals, of this area.
57. In general one must count on a low adquisitive capaci--ty in the local market, for which it is wiser to lend attention to those industries which can sell its pro--ducts in the richer markets of the south (through ex--portation of Bahia's resources, taking into account the possibilities offered through the less expensive labor in Bahia) and to those manufacturing concerns which can attend to the demands of the market of the various northeastern states. This demands a develop--ment coordinated in a regional manner.
58. There are no great opportunities in the field of auxi--liary industry since there is not likely to be heavy industry with mass production which would require sub--contracting.



PRESELECTION

59. Based on the criteria previously discussed it is possible to make a preselection by using the available statistics. This preselection would help determine a reasonable number of points for investigation, and -- would not have an eliminatory or exclusive character. All points considered as having a possibility would be included. In the meantime, this preselection would make it possible to concentrate on direct investigation without risking a disorientation.

INVESTIGATION AND METHODS

60. Before starting the interviews, an indirect investigation was carried out along the preselected lines, -- which included:

- a) Preparation of a "technical file card" of each possibility, including data concerning salaries, values, dimension, additional inputs, investment per working post, socio-economic impact, etc.
- b) Elaboration of a statistical record of Bahia, the Northeast, and Brazil for each product line.
- c) A study of the elaborated cards in the "Prdnter" program of investigations of interior industries.
- d) A study of the available bibliography.

61. Later a careful preparation of a program of interviews, selecting and contacting the enterprises, planning the discussions and outlining the "interview cards" which will be filed in after the actual interview.
62. 89 interviews were held, 29 in interior areas and 60 in Salvador and Aratu, having visited the localities of Feira de Santana, Senhor de Bomfim, Campo Feroso, Juazeiro, Jequié, Vitoria da Conquista, Itabuena, Itapetinga and Ilheus. The program included not only contacts with producers, but also a reduced number of interviews with bankers, businessmen, distributors, and buyers of those products included in the preselection. This gave a more complete vision of the problem.

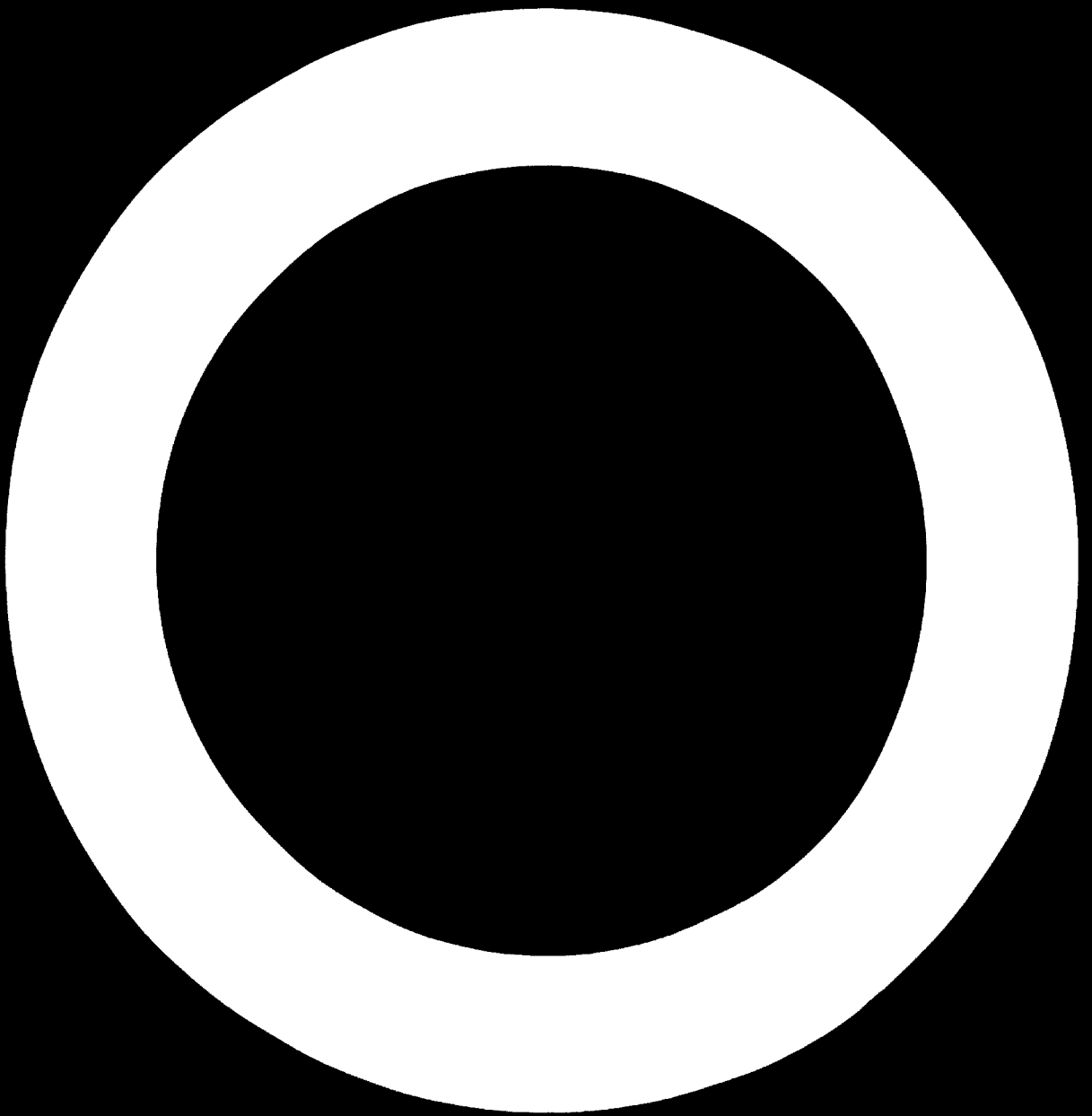
#### RESULTS OF THE INVESTIGATION

63. In the accompanying tables the results of the investigation are briefly presented; the main existing opportunities for each product studied are summarized, as well as the outstanding difficulties for its development in Brazil.
64. Also included are the recommendations gathered. It is necessary to remember the character of this summary, a posteriori of the present section, since the recommendations are the results of an analysis, whose aspects cannot logically be gathered into a pure synopsis. The study of the resumé tables might therefore lead to an incomplete valuation of the investigation if not preceded by a more detained reading of the test.

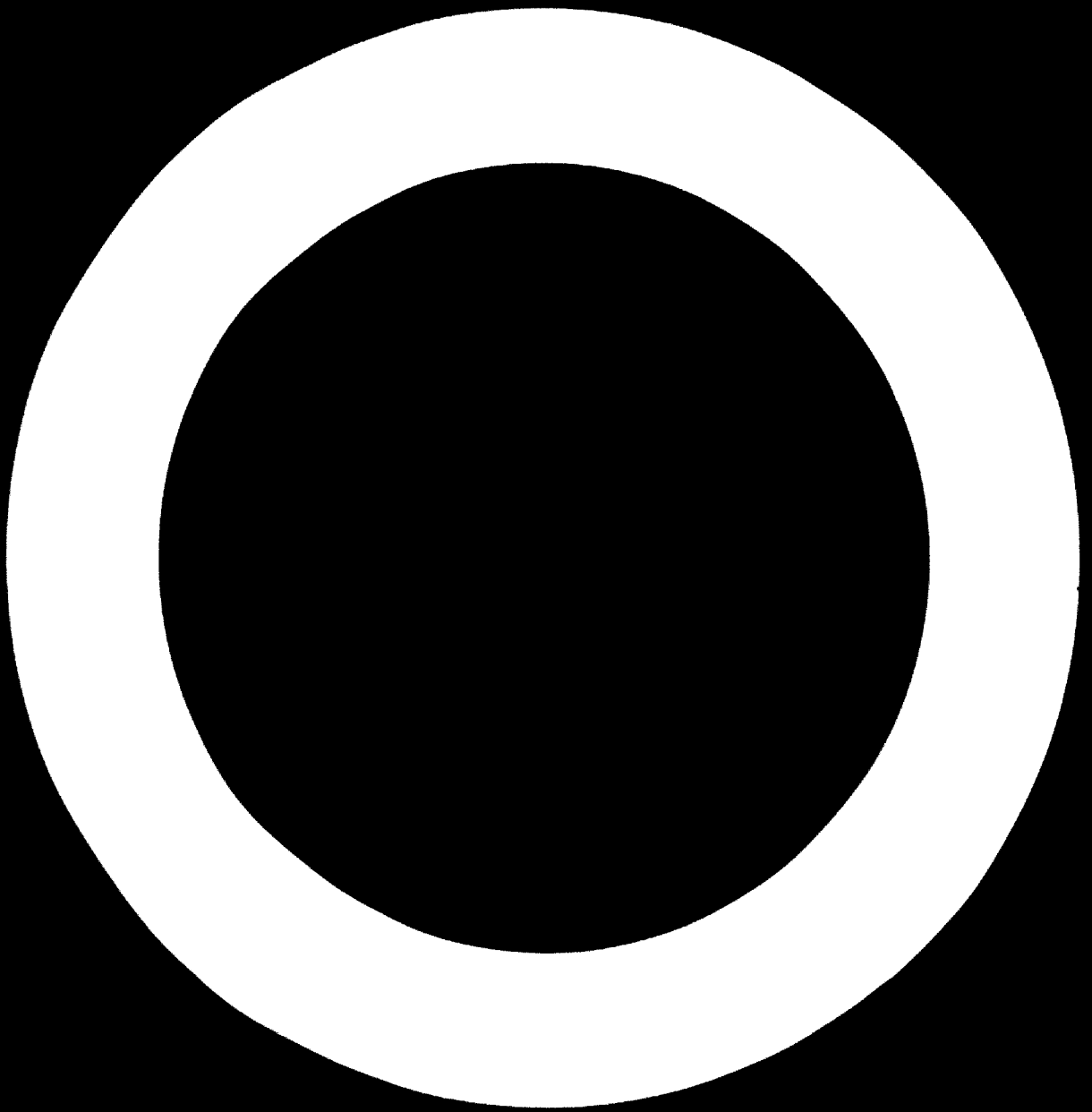
RECOMMENDATIONS

65. The recommendations of this study are included in the preliminary section.

LINE	OPPORTUNITIES	DIFFICULTIES	RECOMMENDATIONS
<p><b>MEAT INDUSTRIES:</b> Cattle and pigs.</p>	<ul style="list-style-type: none"> <li>- Abundant resources</li> <li>- Favorable market prospects, on local as well as national basis. There are those who believe that Brazil will import meat in 1975 (in any case there will be a great demand).</li> </ul>	<ul style="list-style-type: none"> <li>- Distortion of the market: Too many intermediaries</li> <li>- Disloyal competition by the smaller and uncontrolled slaughterhouses without sufficient sanitary guarantees.</li> <li>- Tasty but tough raw material as a consequence of the animal breed and the exploitation system.</li> <li>- Irregular consumption during the week, which means scarce use of the slaughterhouses.</li> </ul>	<ul style="list-style-type: none"> <li>- Action to improve the cattle</li> <li>- Enforcement of the legislation and of the control of the sanitary vigilance at the slaughterhouses</li> <li>- Promotion of integrated industrial meat plants (slaughterhouses, with refrigeration and canning departments, etc.)</li> </ul> <p>All this is considered feasible in a short period of time.</p>
<p><b>POULTRY INDUSTRY</b></p>	<ul style="list-style-type: none"> <li>- Almost everything is still to be done in this line, so popular in the promotion of an adequate nutrition (meat and eggs).</li> <li>- Possibility to proceed gradually.</li> </ul>	<ul style="list-style-type: none"> <li>- Habit of consumption is rare.</li> <li>- Low buying power.</li> <li>- Lack of mixed fodder industries.</li> </ul>	<ul style="list-style-type: none"> <li>- Proceed to promote this industry in short time</li> </ul>
<p><b>DAIRY INDUSTRY</b></p>	<ul style="list-style-type: none"> <li>- Necessity to increase the consumption: great potential demand, flexible to prices.</li> <li>- Brazil imports powdered milk.</li> <li>- Improvable natural pastures and new irrigated land makes it possible to think of an increase of the milk production.</li> </ul>	<ul style="list-style-type: none"> <li>- Scarce milk production by the Indian Brazilian cattle.</li> <li>- Distortion of the consumption: the prohibition to sell natural milk has inclined the demand towards powdered milk and has made liquid pasteurized milk more expensive.</li> </ul>	<ul style="list-style-type: none"> <li>- On a short-term basis proceed with the creation of centralized dairy plants, that use good milking methods and would be in charge of the popularization of the pasteurized liquid milk</li> <li>- On a long-term basis proceed with the promotion of the utilization of milk in zones susceptible to such action, by processing (of milk into powder) and commercialization designed to other areas in Brazil.</li> </ul>

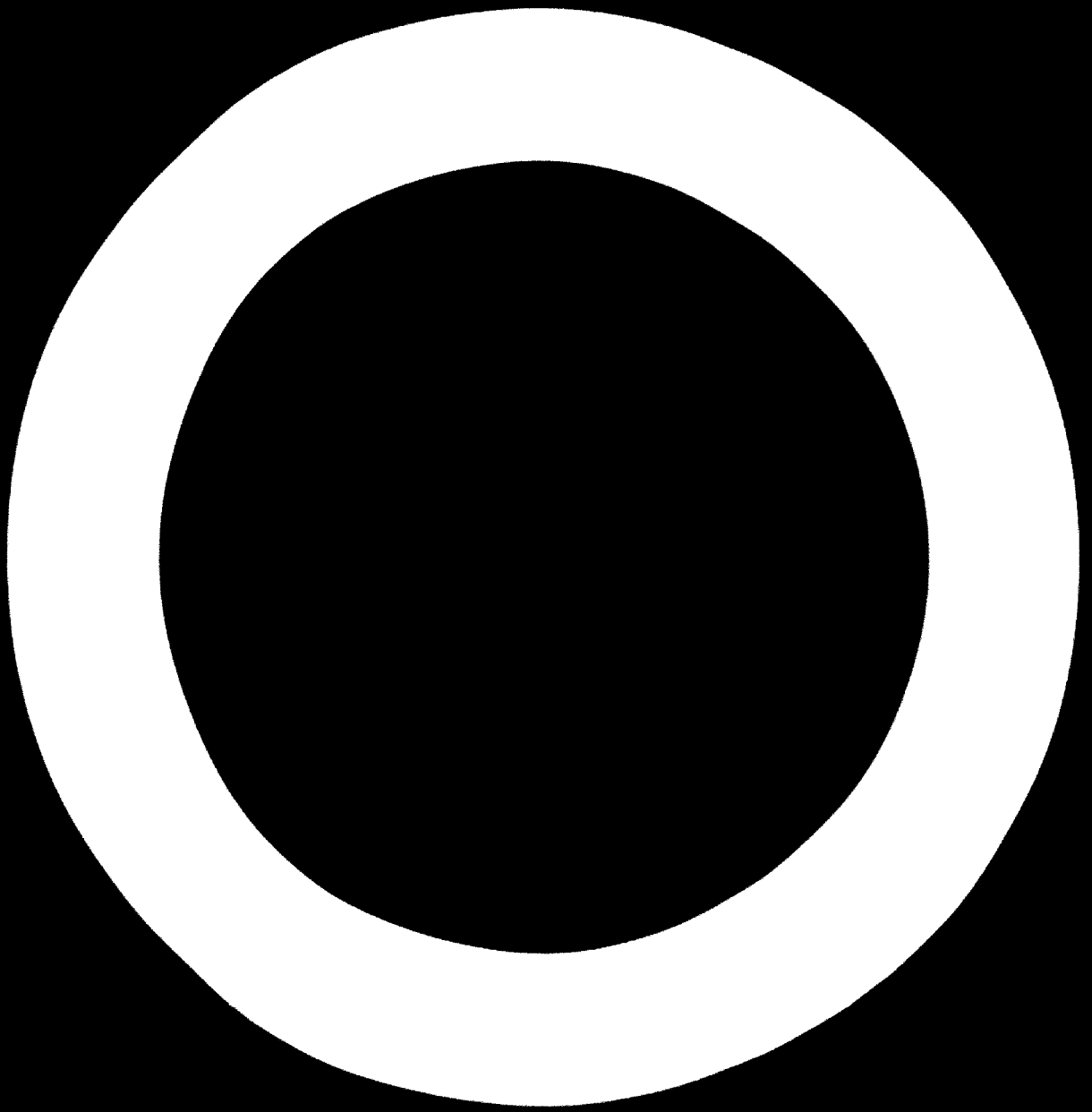


LINE	OPPORTUNITIES	DIFFICULTIES	RECOMMENDATIONS
<p><b>CANNING INDUSTRY FOR FRUIT, VEGETABLES, and TROPICAL JUICES, and PRESERVES.</b></p>	<ul style="list-style-type: none"> <li>- Great availability of raw material (tropical fruits and sugar).</li> <li>- Future availability of vegetables as new land is irrigated.</li> <li>- Insufficient offer on part of the small companies as to preserves.</li> </ul>	<ul style="list-style-type: none"> <li>- Irregularities in the harvesting of the raw material.</li> <li>- Sufficient supply of tropical juices on national level.</li> <li>- Hard competition between tropical juices on international level and consequently a necessity of an important innovation.</li> <li>- National market sufficiently supplied with tropical juices.</li> </ul>	<p>Promote on short-term basis the line of tropical preserves in adequate dimensions for a correct organization and suitable to the harvesting, commercialization and innovation.</p> <p>Afterwards, promote the line of vegetables in accordance with the introduction of new irrigated land.</p> <p>Omit the line of fruit juices</p>
<p><b>CANNED FISH</b></p>	<ul style="list-style-type: none"> <li>- Natural resources of quality fish: craw-fish and lobsters.</li> <li>- Improvement of the communications between the south of the state and the Rio de Janeiro market, through the BR-101, which will animate the fishing industry as a whole.</li> <li>- Present import of canned fish.</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of resources of cheap fish for general consumption.</li> <li>- Small importance of the local market.</li> </ul>	<p>To study the possibility to mount a canning industry for fish and crustacea. Action on long-term basis.</p>
<p><b>MIXED FODDER</b></p>	<ul style="list-style-type: none"> <li>- Present supply insufficient.</li> <li>- Abundance of raw material.</li> <li>- Elemental technology.</li> <li>- Favorable investment per working post.</li> </ul>	<ul style="list-style-type: none"> <li>- Present lack of interest of the farmers for rationalized breeding.</li> <li>- Lack of great poultry exploitation.</li> </ul>	<p>Line to promote on short-term basis in connection with the planned poultry and cattle expansion.</p>
<p><b>COCOA DERIVATIVES</b></p>	<ul style="list-style-type: none"> <li>- Existing resources in the area.</li> <li>- Interest, in principle, of the export of cocoa in its highest grade of transformation.</li> </ul>	<ul style="list-style-type: none"> <li>- Complexity of the world cocoa market and the alternative character of the development taken place within same.</li> <li>- Specific problems of the cocoa production in Brasil.</li> <li>- Reduced importance of Brasil on the world cocoa market.</li> </ul>	<p>Action to protect the processing industry in Bahia in relation to the national market exclusively.</p>

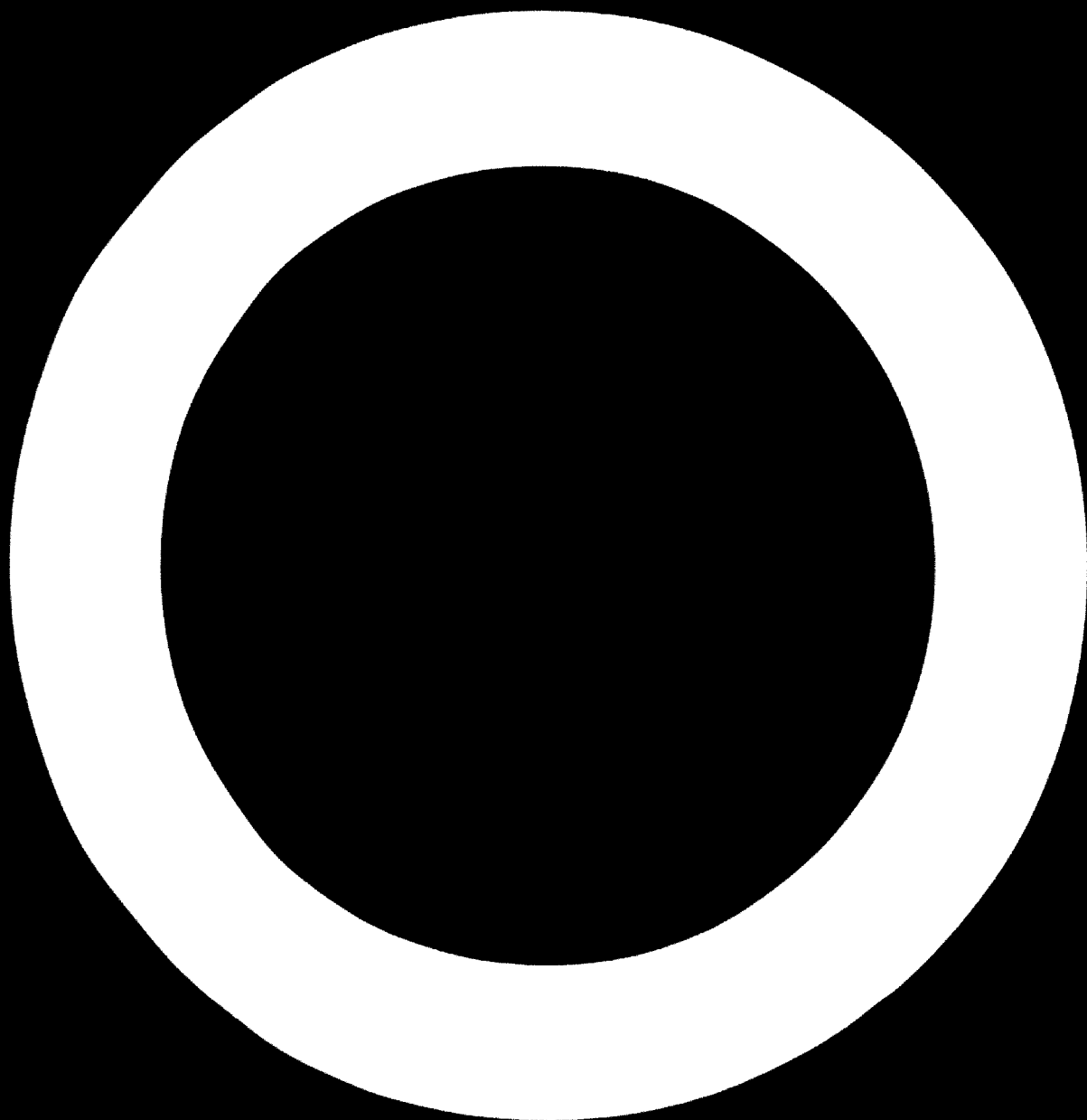


LINE	OPPORTUNITIES	DIFFICULTIES	RECOMMENDATIONS
CEMENT DERIVATIVES	<ul style="list-style-type: none"> <li>- Sufficient cement production once momentaneous cuts are overcome.</li> <li>- Abundant resources of asbestos in the state.</li> <li>- Simple technology, specially when it comes to pre-fabricated goods.</li> <li>- Reduced investment per working post, specially when it comes to pre-fabricated goods.</li> </ul>	<ul style="list-style-type: none"> <li>- Relatively modest market.</li> <li>- Sufficient supply (as to pre-fabricated goods cement-astestos).</li> <li>- Momentaneous cut in the supply of cement.</li> </ul>	<ul style="list-style-type: none"> <li>- Not to promote new industries, since this line, today sufficient, will develop by itself as soon as the market will permit it.</li> </ul>
TILES AND CERAMICS	<ul style="list-style-type: none"> <li>- Existing resources</li> <li>- Possibilities to export to other states and abroad (tiles).</li> </ul>	<ul style="list-style-type: none"> <li>- Supply is satisfactorily taken care of.</li> </ul>	<ul style="list-style-type: none"> <li>- Not to promote new industries, as this line will develop by itself.</li> </ul>
FLAT GLASS	<ul style="list-style-type: none"> <li>- Nonexistence of factories for flat glass in Bahia.</li> <li>- High transport costs for this product.</li> <li>- Market, extense by necessity, and will enlarge further through the housing projects of B. N. H.</li> </ul>	<ul style="list-style-type: none"> <li>- Market attended to by the industry in the south.</li> <li>- Increase (43%) of the productive capacity of the flat glass industry in Brazil.</li> </ul>	<ul style="list-style-type: none"> <li>- Not to promote this type of industry as long as the infra-use problems are not resolved on a national level.</li> </ul>
SANITARY EARTHENWARE (Commercial porcelain)	<ul style="list-style-type: none"> <li>- Nonexistence of factories for sanitary earthenware of commercial porcelain in Bahia.</li> <li>- Excessive transport costs.</li> <li>- Market with good prospects (Plans of B. N. H.)</li> </ul>	<ul style="list-style-type: none"> <li>- Market attended to by the industry in the south.</li> </ul>	<ul style="list-style-type: none"> <li>- To proceed to investigate on a long-term basis the possibility to promote this line.</li> </ul>
ELECTRIC INSULATORS	<ul style="list-style-type: none"> <li>- Absolute possibility to manufacture these in Bahia.</li> <li>- Bahia imports insulators.</li> <li>- Possible future relation with the copper industry.</li> </ul>	<ul style="list-style-type: none"> <li>- Projects under way, approved by SUDENE.</li> </ul>	<ul style="list-style-type: none"> <li>- To analyze the future possibility of this line in connection with the coming projects.</li> </ul>

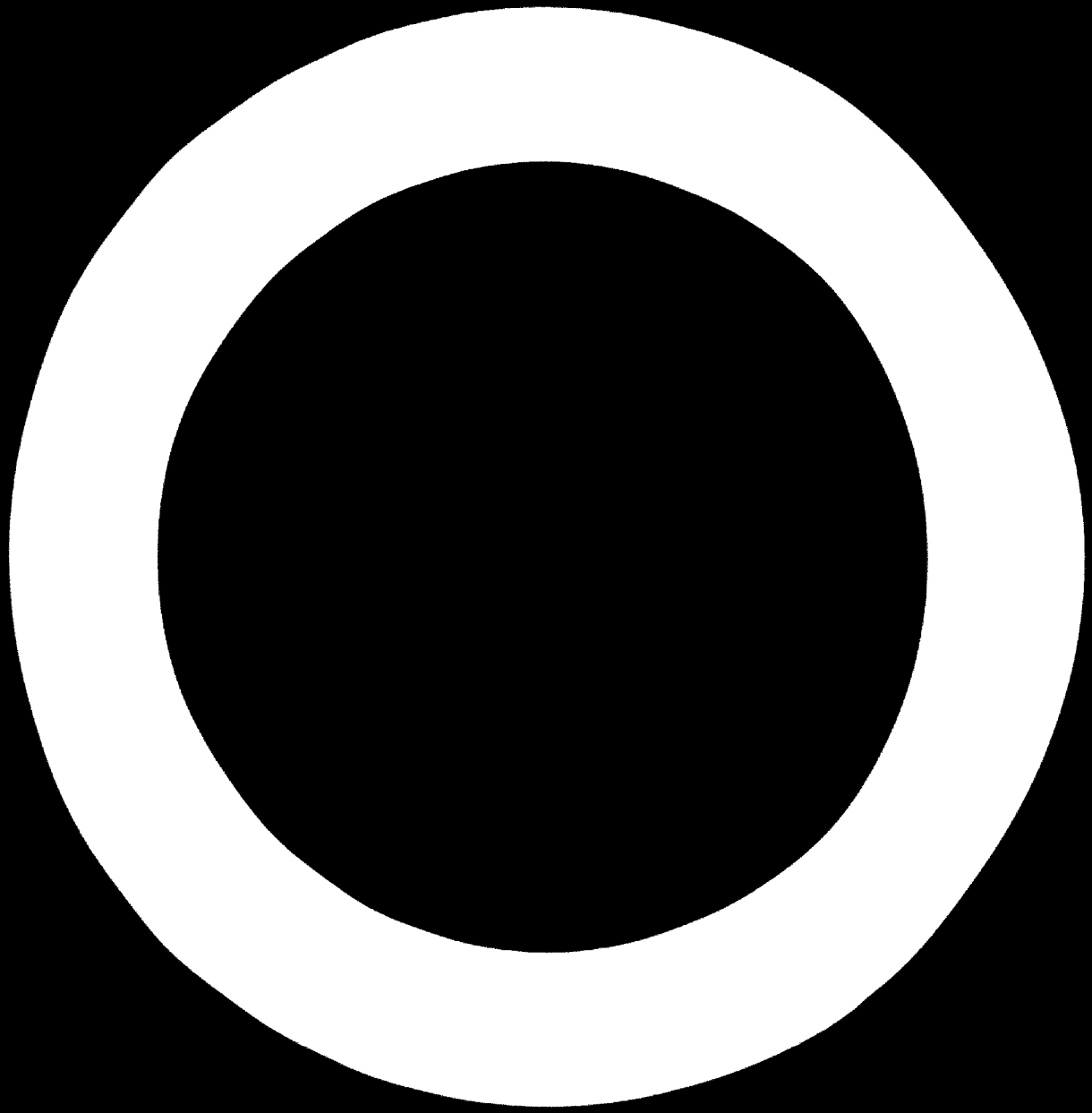




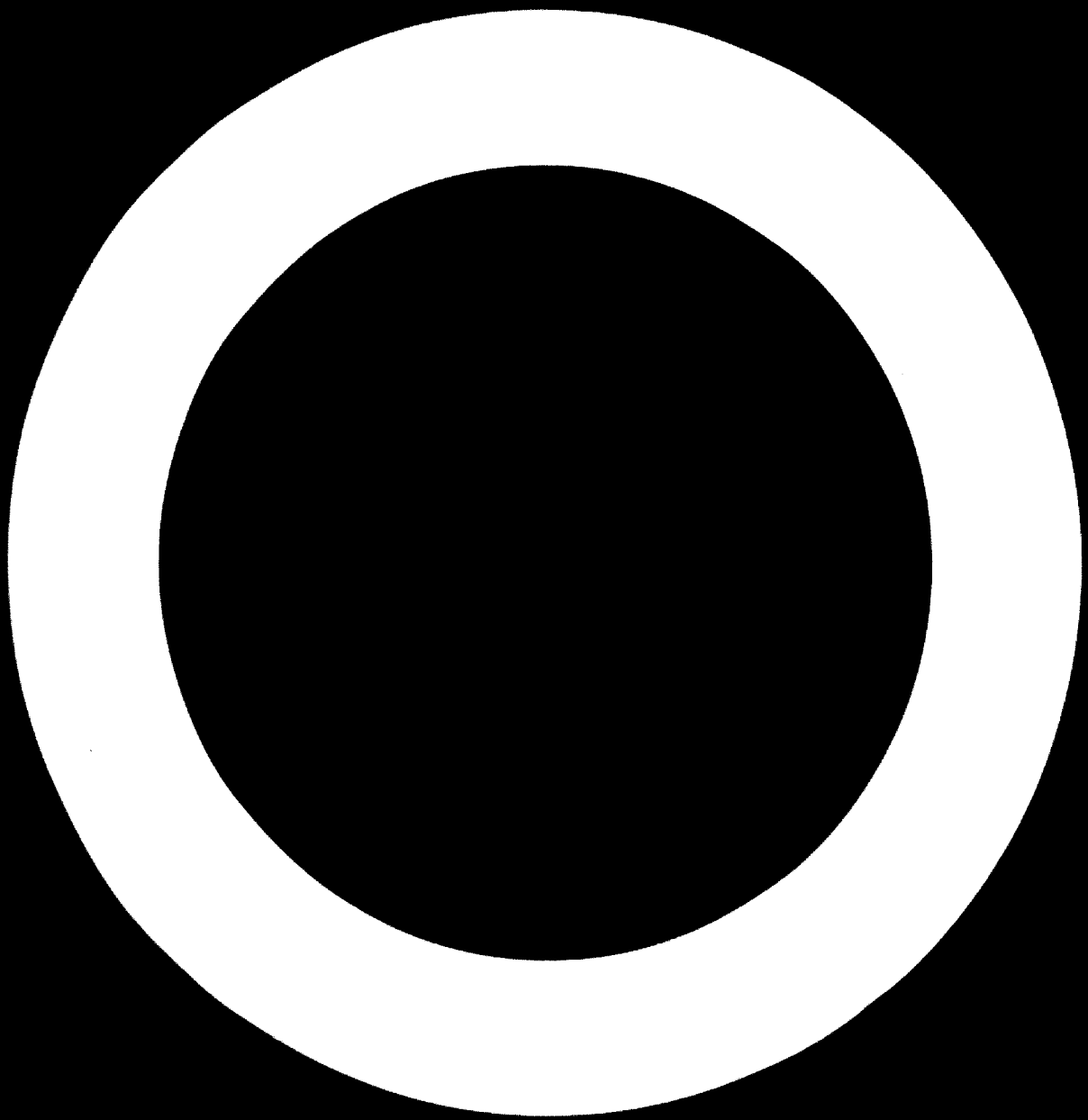
LINE	OPPORTUNITIES	DIFFICULTIES	RECOMMENDATIONS
DEVELOPMENT OF OTHER RESOURCES OF NON-METALLIC MINERALS.	<ul style="list-style-type: none"> <li>- Abundance of resources (calc, marble, Brazilian pebble, etc.)</li> <li>- Artistic utilization only of several of them.</li> </ul>	<ul style="list-style-type: none"> <li>- Several new projects under way.</li> </ul>	<ul style="list-style-type: none"> <li>- Apart from the projects under way no additional action is advisable.</li> </ul>
FINE WOODS	<ul style="list-style-type: none"> <li>- Very valuable resources in the south of the state, deficiently exploited technically and commercially.</li> </ul>	<ul style="list-style-type: none"> <li>- Interests created as to the exploitation on its present conditions.</li> <li>- Infrastructural deficiencies in the production zones.</li> </ul>	<ul style="list-style-type: none"> <li>- Study of the integral utilization of fine woods, specially Jacaranda (from the moment of cutting to the commercialization of the processed products.) Short-term action.</li> </ul>
MASS-PRODUCED FURNITURE	<ul style="list-style-type: none"> <li>- Market of local character, normally attended to by the manufacturers in the South.</li> </ul>	<ul style="list-style-type: none"> <li>- Attempt was made to get to know the causes of the competition between the manufacturers in the South of the State of Bahia, and it was determined that it is due to defects in the structure of the sector on local level.</li> </ul>	<ul style="list-style-type: none"> <li>- Not to proceed to promotion, but to the restructure.</li> </ul>
RUBBER GOODS	<ul style="list-style-type: none"> <li>- Important resources of natural rubber.</li> <li>- Possible future resources of synthetic rubber.</li> <li>- Local market for second hand tires.</li> <li>- Market for rubber devices (appliances).</li> <li>- Brasil imports manufactured rubber.</li> <li>- Excellent results obtained already in the line of surgical rubber devices.</li> </ul>	<ul style="list-style-type: none"> <li>- Projects under way for the production of tires.</li> <li>- Lack of know-how and capital for the line of rubber devices.</li> <li>- High grade of monopoly within the sector.</li> </ul>	<ul style="list-style-type: none"> <li>- Study of a possible development of the line of rubber devices. Long-term action.</li> </ul>
TANNED GOODS	<ul style="list-style-type: none"> <li>- Important resources of raw material.</li> <li>- Export possibilities.</li> <li>- Possibilities to replace the sales of skins to the South by the sales of leather.</li> </ul>	<ul style="list-style-type: none"> <li>- Generic problems on the Brazilian skin market.</li> <li>- Hard competitive position from the leather manufacturers in the South.</li> </ul>	<ul style="list-style-type: none"> <li>- To proceed to investigate the promotion possibility of this line on short-term basis.</li> </ul>



LINE	OPPORTUNITIES	DIFFICULTIES	RECOMMENDATIONS
SPECIAL SKINS WILD ANIMALS	<ul style="list-style-type: none"> <li>- Satisfactory resources without being exceptional.</li> <li>- Cooperation with the tourism promotion programs.</li> </ul>	<ul style="list-style-type: none"> <li>- Marketing centered to the southern states for their own market as well as the tourist market.</li> </ul>	<ul style="list-style-type: none"> <li>- To promote, as a second step of action, prepared skins to the South as alternative to their commercialization in Bahia (this last in relation with the tourist market).</li> </ul>
FOOTWEAR	<ul style="list-style-type: none"> <li>- Evident importance on a market which has 7 million inhabitants.</li> <li>- Relative simplicity of technology and know-how.</li> <li>- Low investment per working post.</li> </ul>	<ul style="list-style-type: none"> <li>- The resources of the raw material are abundant, but must be promoted.</li> <li>- There are skins, but the leather must be promoted; the petrochemical (plastics) industry and the rubber industry must be established and promoted.</li> </ul>	<ul style="list-style-type: none"> <li>- Study the possibility of this line of production on a long-term basis.</li> </ul>
TEXTILE & READY-TO-WEAR CLOTHING	<ul style="list-style-type: none"> <li>- Fabrics: availabilities of raw material including future availability of petro-chemical fibres.</li> <li>- Ready-to-Wear: availability of cheap labor and a potential market, today supplied mainly from the South of the country.</li> </ul>	<ul style="list-style-type: none"> <li>- Fabrics: lack of raw materials which means that considerable stocks must be kept.</li> <li>- Fabrics and Ready-to-Wear: competitive position of the manufacturers in the South who absorb more than 80% of the Bahian market.</li> </ul>	<ul style="list-style-type: none"> <li>- Integral study of the subsector for a long-term action.</li> </ul>
LEAF FIBRES, SPECIALLY MEMP	<ul style="list-style-type: none"> <li>- Favorable conjuncture of the transferring industry of leaf fibres in Bahia.</li> </ul>	<ul style="list-style-type: none"> <li>- The world market of leaf fibres has regressed as a consequence of the competition of substitute products.</li> <li>- Prospects of a crisis in Bahia within 7 - 8 years, due to the fact that no plantation of new trees has been made.</li> <li>- Necessity of innovation before proceeding to new applications of the hard fibres.</li> </ul>	<ul style="list-style-type: none"> <li>- No other action is proposed, but to continue promoting the investigation of new applications of the leaf fibres, through the corresponding subcommittee of F.A.O.</li> </ul>



LINE	OPPORTUNITIES	DIFFICULTIES	RECOMMENDATIONS
CHEMICAL INDUSTRY	<ul style="list-style-type: none"> <li>- Generic importance of a market with 7 million inhabitants.</li> <li>- Necessities of the future petro-chemical plant.</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of discovered mineral resources appropriate for a chemical industry as sulphur, potassium, phosphate, etc.</li> <li>- Competition by the industry in the South, justified when it comes to high price products.</li> </ul>	<ul style="list-style-type: none"> <li>- Not to make plans of great importance until there exist better information as to the mineral resources in the state.</li> <li>- Immediate coordination with the petro-chemical projects.</li> </ul>
PETROCHEMICAL INDUSTRY	<ul style="list-style-type: none"> <li>- Natural resources (oil and natural gas) partly not profitted by today (reinjected gas).</li> </ul>	<ul style="list-style-type: none"> <li>- Existence of a first Brazilian petrochemical plant in the industrialized southern zone.</li> </ul>	<ul style="list-style-type: none"> <li>- Promotion and acceleration of the existing petrochemical programs, especially those related to the leading products (ethylene, benzene, toluene etc.)</li> <li>- Short-term action.</li> </ul>
SOAPS AND DETERGENTS	<ul style="list-style-type: none"> <li>- Existent local soap industries which today produce articles of low quality, but which can be changed to a more refined production.</li> </ul>	<ul style="list-style-type: none"> <li>- Competition of the industries in the South. Limits in the demand for detergents, because of the nonexisting standardization of domestic washing machines.</li> </ul>	<ul style="list-style-type: none"> <li>- It is not recommended to promote this line.</li> </ul>
EXTRACTION OF MINERALS	<ul style="list-style-type: none"> <li>- Abundant resources. Already under exploitation are those of lead, magnesium, manganese, chromium and copper.</li> <li>- Favorable general situation of the world market for this type of minerals.</li> <li>- Also positive prospects for the national market.</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of systematic and coordinated investigation of basic minerals.</li> <li>- Infrastructural deficiencies, principally as to transport.</li> <li>- Lack of professional management on medium level.</li> </ul>	<ul style="list-style-type: none"> <li>- Short-term action for: <ul style="list-style-type: none"> <li>- Promotion of mineral investigation.</li> <li>- Temporal import of medium level professionals.</li> <li>- Creation of technical schools for professionals on medium level.</li> <li>- Economic study of possibilities of infrastructural improvements for the mining industry.</li> </ul> </li> </ul>

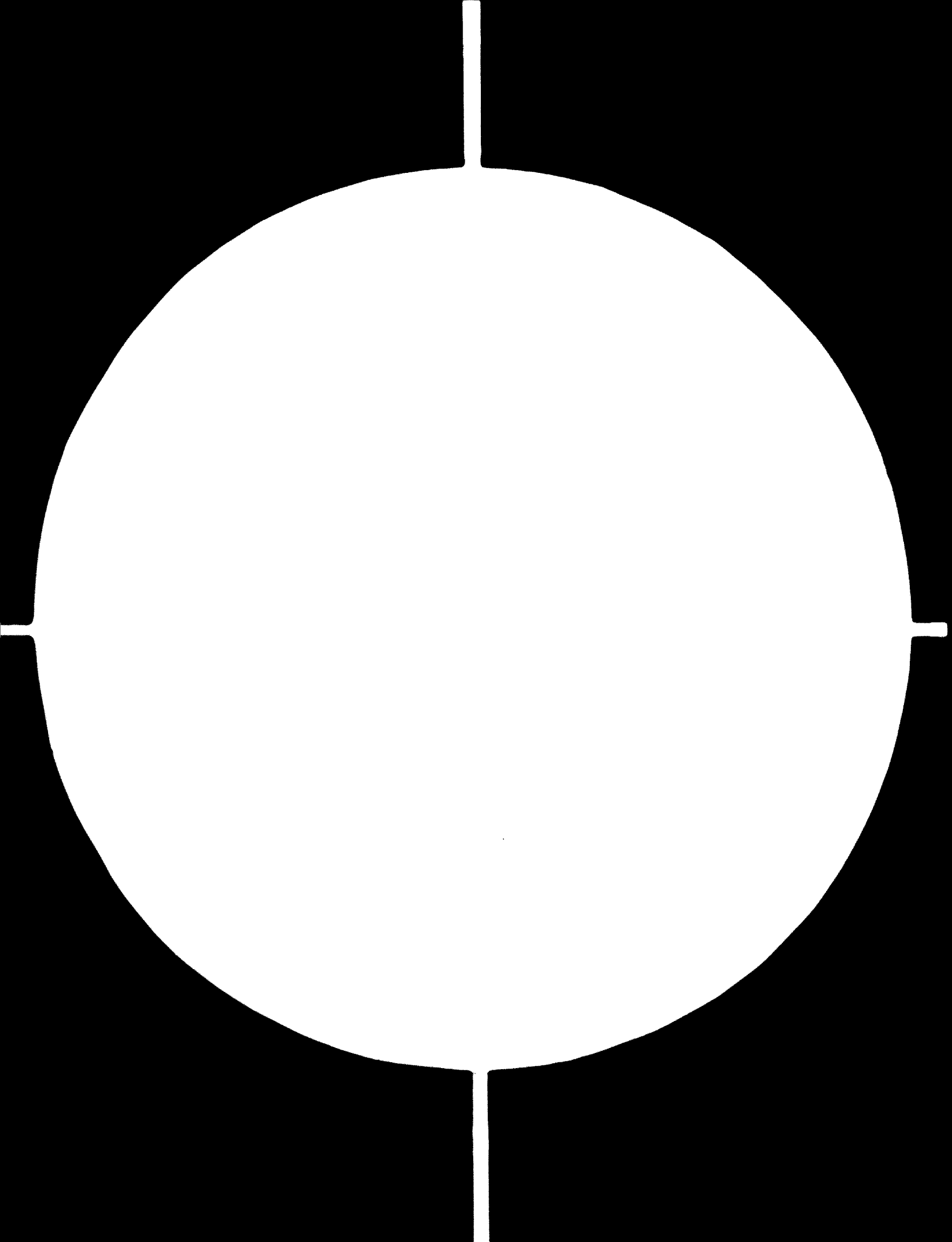


**G - 560**



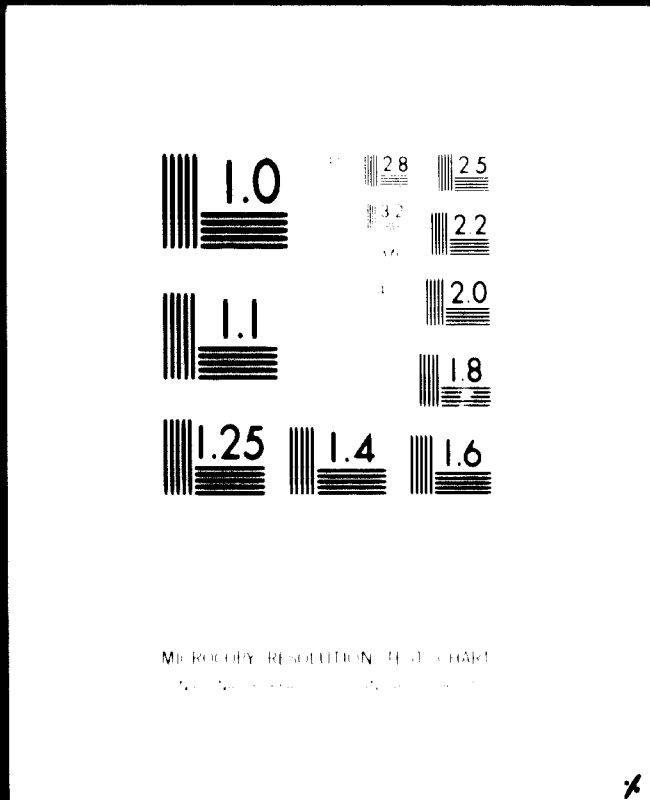
**81.08.24**





# 5 OF 7

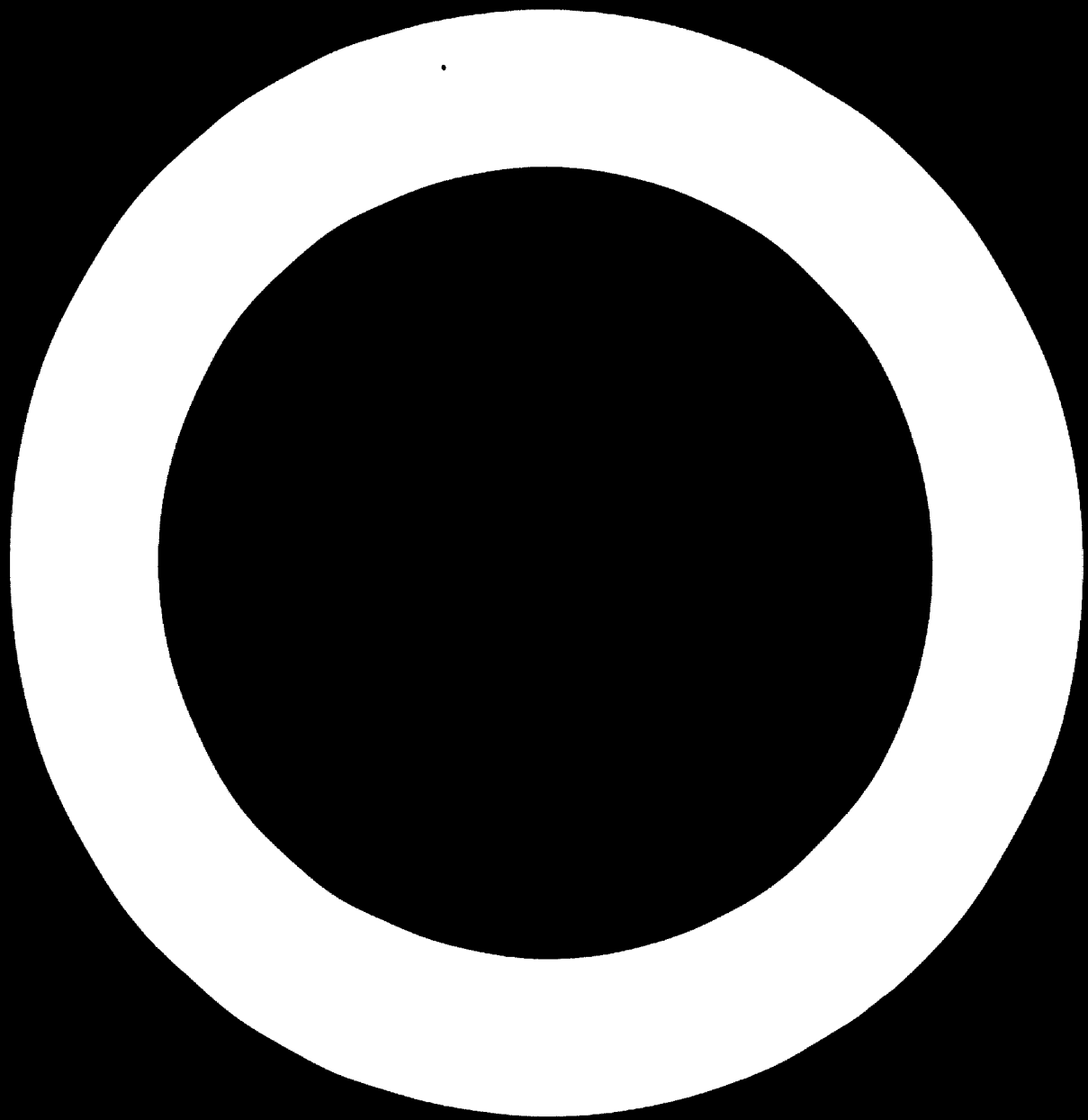
# 02510



# 24 x

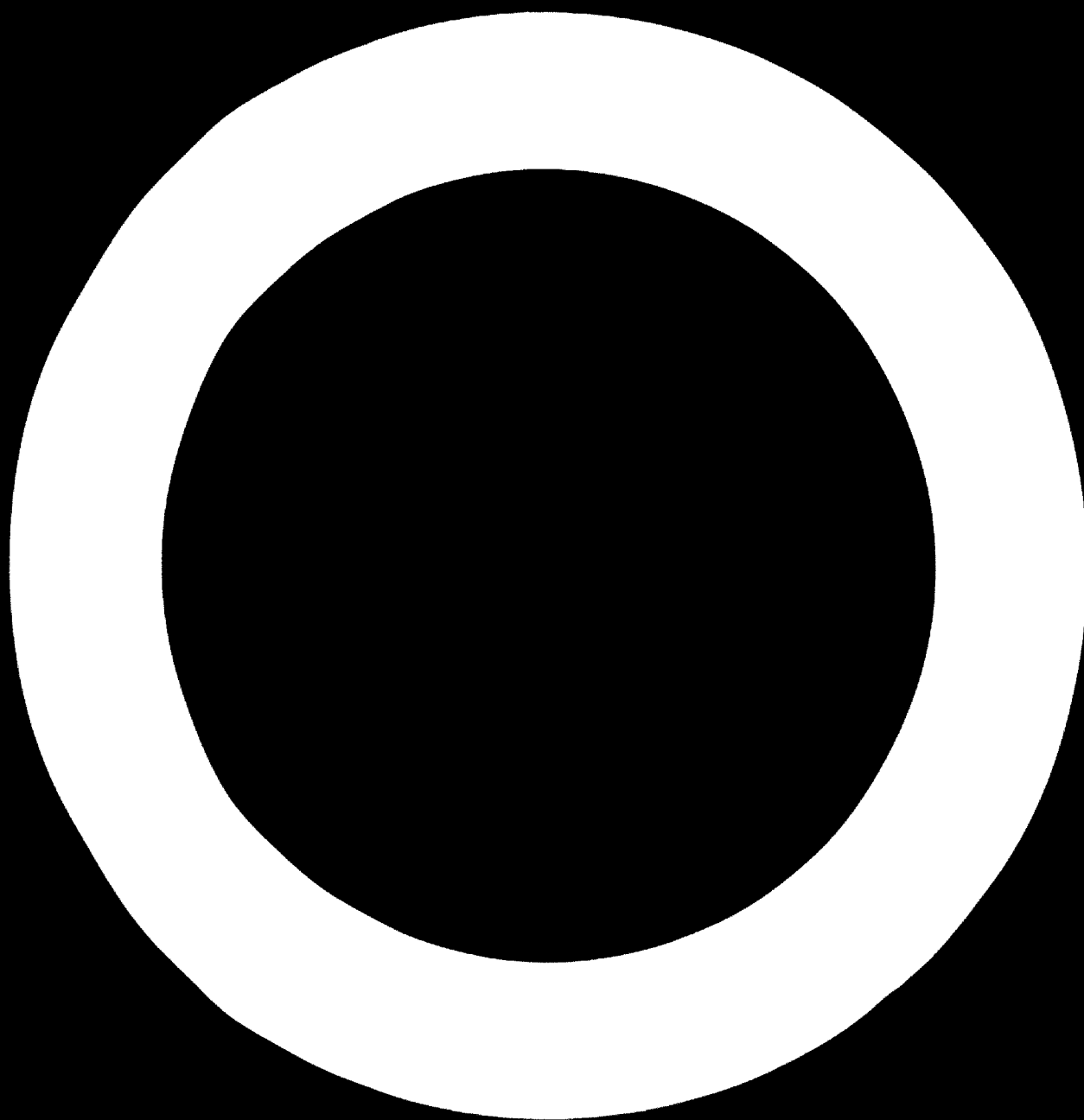
# D

LINE	OPPORTUNITIES	DIFFICULTIES	RECOMMENDATIONS
METALLURGY	<ul style="list-style-type: none"> <li>- Mine resources in the area.</li> <li>- Local market necessities.</li> <li>- Certain possibilities of export.</li> </ul>	<ul style="list-style-type: none"> <li>- Generic difficulties for the export of metals instead of minerals.</li> <li>- The localization of the copper mining industry is probably inadequate considering the new projects of not using imported minerals.</li> </ul>	<ul style="list-style-type: none"> <li>- Short-term action for:</li> <li>- Economical study on the general policy for mining and metallurgy in relation to the foreign market.</li> <li>- Reconsideration of the localization of the copper metallurgy.</li> </ul>
IRON AND STEEL INDUSTRY (SIDERURGY)	<ul style="list-style-type: none"> <li>- Insufficiency of the present local supply in relation to the present and future needs.</li> <li>- Project for obtaining 280.000 tons of steel through the method of direct reduction.</li> <li>- Expansive attitude of the present producers.</li> </ul>	<ul style="list-style-type: none"> <li>- Subordination and conditioning of the iron &amp; steel industry of Bahia to the national policy for this type of industry.</li> <li>- The impossibility to decide as to the destiny of the project of acquiring 280.000 tons of steel through reduction; this paralyzes the introduction of expansion projects of the existing iron &amp; steel industries as they do not know, how to orient these (according to rolled products: flats, commercials ...)</li> </ul>	<ul style="list-style-type: none"> <li>- Study of the future evolution of the Bahian iron &amp; steel industry, considering a coordination within short with diverse existing partial plans.</li> </ul>
FORGING & FOUNDING	<ul style="list-style-type: none"> <li>- Basic industries for introduction of an industrialization.</li> <li>- Present potential demand unsatisfied.</li> <li>- An immediate renewal of the consumer industries very probable as soon as production unavailable.</li> </ul>	<ul style="list-style-type: none"> <li>- Industrial plants of modest dimension can be established for the moment in accordance to the absolute capacity of the market.</li> </ul>	<ul style="list-style-type: none"> <li>- Short-term study of the possibility of these lines of production.</li> </ul>
BOILER FORGE AND METAL STRUCTURES.	<ul style="list-style-type: none"> <li>- Basic elements for the industrial development.</li> <li>- Potential demand derived from the petrochemical projects.</li> </ul>	<ul style="list-style-type: none"> <li>- Sufficient development of the production capacity in Bahia in relation to the market.</li> <li>- Lack in continuity of demand due to the low number of possible clients (specially off boiler forge).</li> </ul>	<ul style="list-style-type: none"> <li>- Line of autonomous development, promotion of which is not considered necessary.</li> </ul>



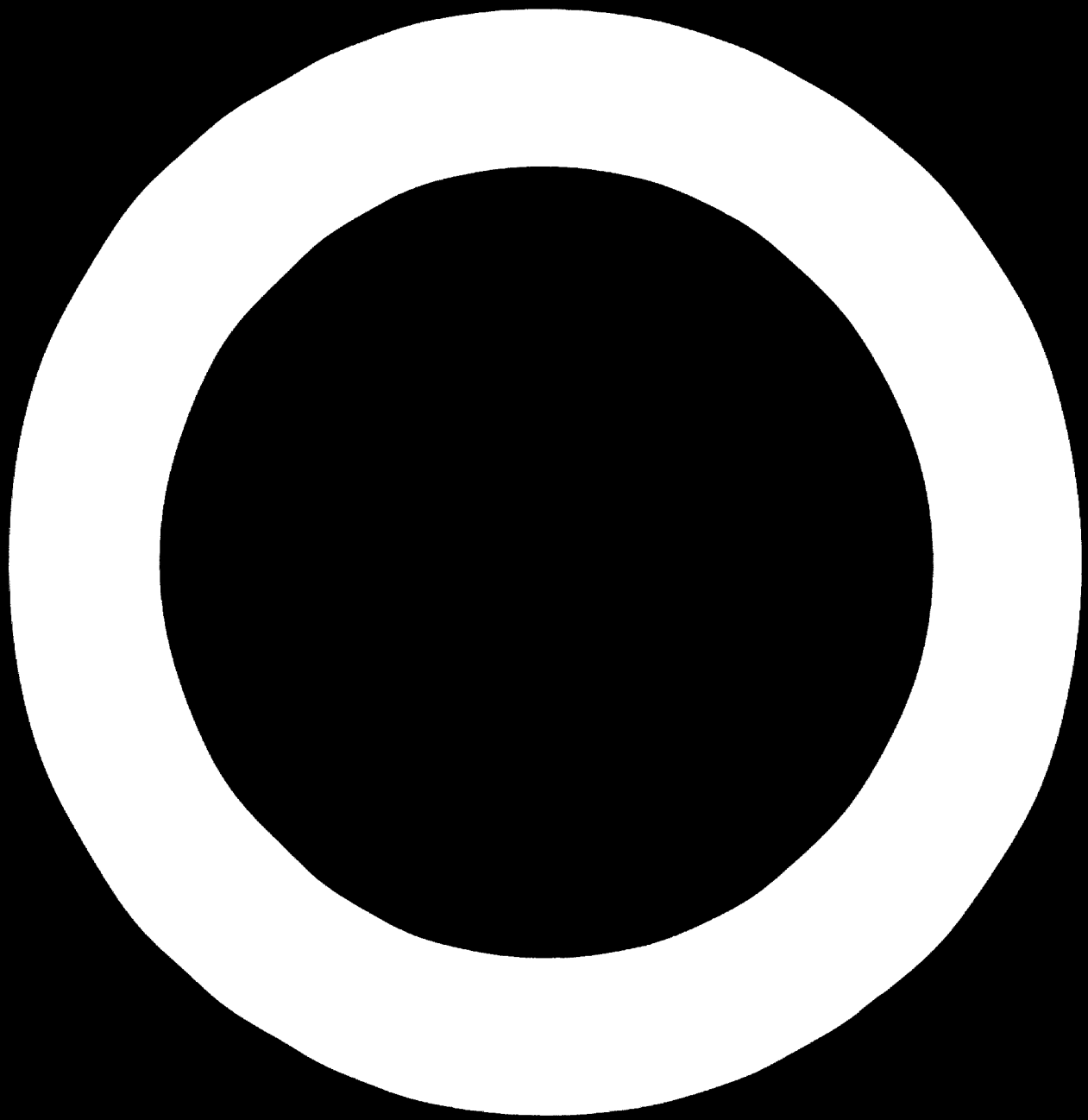
LINE	OPPORTUNITIES	DIFFICULTIES	RECOMMENDATIONS
<p><b>HARDWARE, MANUFACTURING OF TOOLS AND SPARE PARTS</b></p>	<ul style="list-style-type: none"> <li>- Interesting potential demand within the construction and agriculture on the local market.</li> <li>- Possibility to assure the acquisition of products of easy fabrication without great investments.</li> <li>- Possibilities to compete with the present suppliers in the South.</li> </ul>	<ul style="list-style-type: none"> <li>- Necessity to assure the supply of raw material.</li> <li>- Necessity to facilitate a minimum of know-how and technical assistance.</li> <li>- Necessity (for spare parts) to obtain licence of manufacturing.</li> <li>- Low production series (for spare parts).</li> </ul>	<ul style="list-style-type: none"> <li>- Short-term promotion of the hardware and tool lines.</li> </ul>
<p><b>SHIPBUILDING</b></p>	<ul style="list-style-type: none"> <li>- Future development of fishing industry.</li> <li>- Increase in navigation on the river Sao Francisco.</li> </ul>	<ul style="list-style-type: none"> <li>- Susceptible supply to attend to the present demand and, with intensification of the working shifts or small improvements, attend to the foreseen probably not very large increases on the market.</li> </ul>	<ul style="list-style-type: none"> <li>- Line which is not necessary to promote.</li> </ul>
<p><b>OTHER PROCESSED METALLIC PRODUCTS</b></p>	<ul style="list-style-type: none"> <li>- Future availabilities of iron ore.</li> <li>- Interesting local market.</li> <li>- Quite elemental technology in these lines.</li> </ul>	<ul style="list-style-type: none"> <li>- Limited action for lines of simple technology and less value given to them within the mechanical industry.</li> </ul>	<ul style="list-style-type: none"> <li>- Promote lines of the following characteristics: agricultural tools, valves, etc. On short or long-term basis according to the complexity of same.</li> </ul>
<p><b>PACKAGING MATERIAL</b></p>	<ul style="list-style-type: none"> <li>- Necessity of packaging material on part of the local industry.</li> </ul>	<ul style="list-style-type: none"> <li>- The variety of mentioned necessities which means small productions of each type packing material.</li> <li>- For the moment local raw material is lacking.</li> <li>- Interesting projects approved by SUDENE (Kraft paper and paper bags).</li> </ul>	<ul style="list-style-type: none"> <li>- To adapt as much as possible the local material, (plastics, fine wooden sheets, etc), to the packing necessities, since it does not seem to exist a possibility to promote any special line within such a variety of needs.</li> </ul>
<p><b>ASSEMBLY INDUSTRIES</b></p>	<ul style="list-style-type: none"> <li>- Abundant and cheap labor.</li> <li>- Overpopulation of the industrial zones in the South.</li> </ul>	<ul style="list-style-type: none"> <li>- Everything depends on knowing how to find and promote the real and concrete opportunities, going beyond mere possibilities.</li> </ul>	<ul style="list-style-type: none"> <li>- Immediate action for a study of opportunities and take measures to get preliminary contracts for mounting.</li> </ul>

STATISTICS APPENDIX



A-0 INDEX OF TABLES





INDEX OF TABLESA-1) STATISTICS FROM THE STATE OF BAHIA

- Table 1.4.1. Railway passenger traffic.
- " 1.4.2. Railway merchandise traffic.
- " 1.4.3. Salvador Port traffic.
- " 1.4.4. Ilheus Port traffic.
- " 1.4.5. Water supply fares: SCSAB.
- " 1.4.6. Water supply fares: SASK.
- " 1.5.1. Agrarian surface, cultivated area, num. of workers, num. of explotations.
- " 1.5.2. Agrarian surface distribution according to applications.
- " 1.5.3. Agricultural productions.
- " 1.5.4. Principal products of vegetal extraction.
- " 1.5.5. Principal forestal productions.
- " 1.5.6. Cattle resources.
- " 1.5.7. Data from the fishing sector.
- " 1.5.8. Savage animals productions.
- " 1.5.9. Metallic and non-metallic mineral productions.
- " 1.5.10. Petroleum production.
- " 1.5.11. Natural gas production.
- " 1.7.1. Funded banking balances on Dec.31st. 1968.
- " 1.7.2. Percentages for the State of Bahia against the total of Brazil.

- Table 1.8.1. Bahia manufacturing establishments distribution by dimensions.
- " 1.8.2. Number of establishments and personnel occupied in processing industries.
  - " 1.8.3. People employed in the Industry according to geographical areas.
  - " 1.8.4. Percentual distribution of people employed in the Industry according to geographical areas.
  - " 1.8.5. Employments already created or near to be created by action of SUDENE according to geographical areas on Sep. 23rd. 1970.

A-2) STATISTICS FROM BRAZIL

- Table 2.2.1. Brazil population evolution.
- " 2.2.2. Percentual population distribution.
  - " 2.2.3. Population of capitals and percentages -- against total of the State.
  - " 2.2.4. Silviculture: Tree felling.
  - " 2.2.5. Silviculture; Charcoal.
  - " 2.2.6. Silviculture: Other products.
  - " 2.2.7. Hunting: Savage animals skins and leathers production.
  - " 2.2.8. Fishing: Production.
  - " 2.2.9. Principal cultivations productions.
  - " 2.2.10. Cattle and fowls census.
  - " 2.2.11. Cattle, aviculture and apiculture productions.
  - " 2.2.12. Employment in process industries. Sector - distribution.
  - " 2.2.13. Processing industry: production value, employed personnel and salaries.

Table 2.2.14. Resume of the principal industrial productions.

- " 2.2.15. Foreign commerce: import.
- " 2.2.16. Foreign commerce: export.
- " 2.2.17. Balance of capitals.
- " 2.2.18. Structure of public expenses in Brazil.
- " 2.2.19. Government expenses in % from PNB.
- " 2.2.20. Tributary presion.
- " 2.2.21. Relationship between attorney incomes and PNB.

A-3) STATISTICS USED FOR PRESELECTION OF PRODUCTIVE LINES

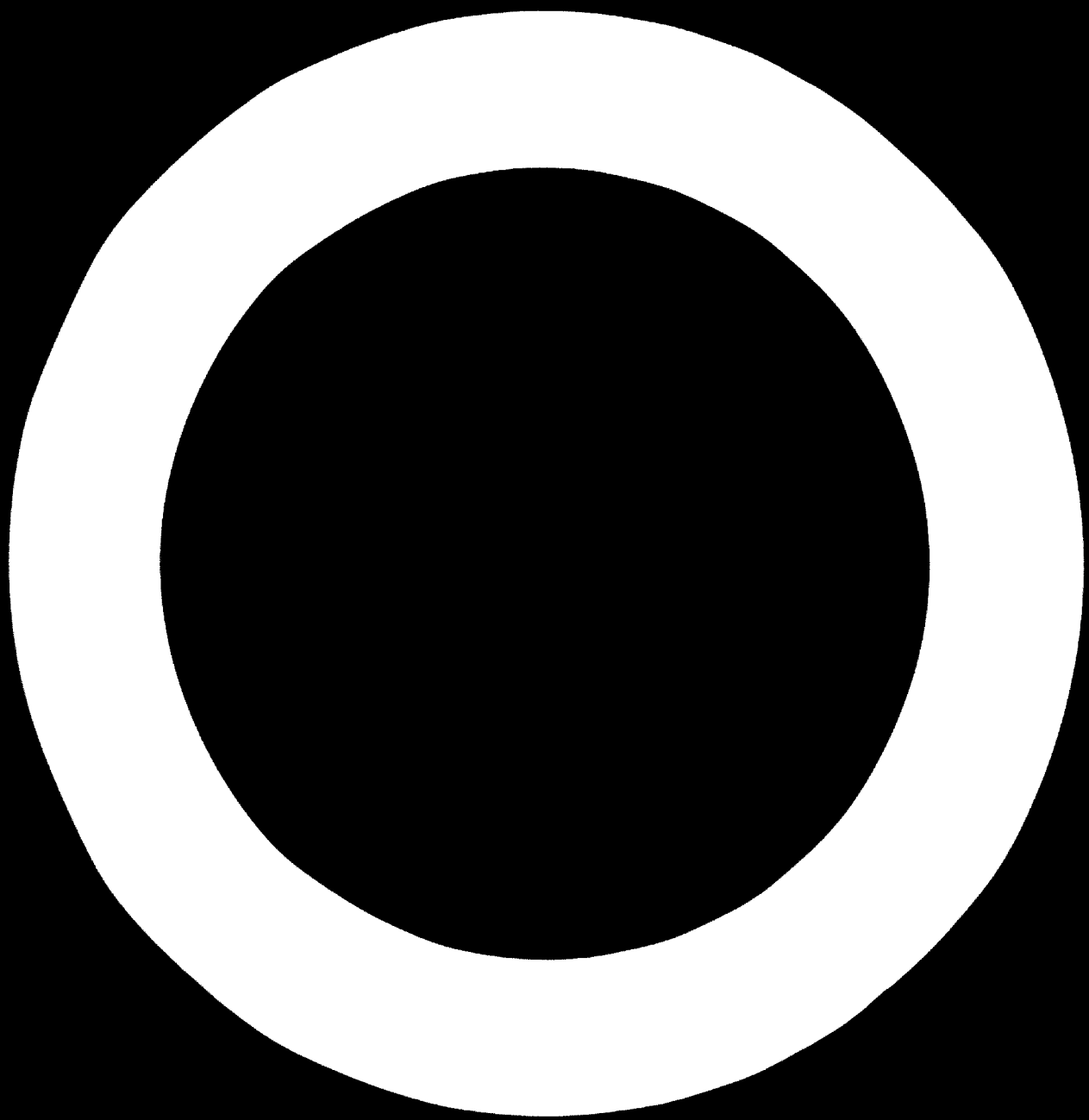
Table 2.3.1. Food products.

- " 2.3.2. Beverages.
- " 2.3.3. Tobacco.
- " 2.3.4. Wood.
- " 2.3.5. Furniture.
- " 2.3.6. Paper and cardboard.
- " 2.3.7. Natural rubber.
- " 2.3.8. Leather and skins.
- " 2.3.9. Textile.
- " 2.3.10. Clothing and shoes.
- " 2.3.11. Perfume.
- " 2.3.12. Chemistry.
- " 2.3.13. Non-metallic minerals.
- " 2.3.14. Metallurgy.

A-4) STATISTICS OF DETAIL IN THE INVESTIGATED LINES

Table 2.5.1.	Non-metallic minerals: resume.
" 2.5.1.1.	Sanitary porcelaine.
" 2.5.1.2.	Wall-tiles.
" 2.5.1.3.	Insulators.
" 2.5.1.4.	Flat glass.
" 2.5.2.	Textile: resume.
" 2.5.2.1.	Artificial tissues.
" 2.5.2.2.	Leaf fibers and several products of vegetal origin.
" 2.5.2.3.	Knitted fabrics.
" 2.5.3.	Food products: resume..
" 2.5.3.1.	Meats.
" 2.5.3.2.	Fish canning (even shell-fishes).
" 2.5.3.3.	Maize preparations and mixed feeds.
" 2.5.3.4.	Fruit and greens canning.
" 2.5.3.5.	Milky goods.
" 2.5.4.	Furniture.
" 2.5.4.1.	Wooden furniture.
" 2.5.5.	Perfumery: resume.
" 2.5.5.1.	Detergents and soaps.
" 2.5.6.	Wood: resume.
" 2.5.6.1.	Stock.
" 2.5.7.	Beverages: resume.
" 2.5.7.1.	Tropical fruit juices.

Table 2.5.3.	Clothing and shoes: resume.
" 2.5.3.1.	Confection.
" 2.5.9.	Leather and skins: resume.
" 2.5.9.1.	Leather and skins.
" 2.5.10.	Mechanics: resume.
" 2.5.10.1.	Brazier trade.
" 2.5.10.2.	Mechanics.
" 2.5.11.	Metallurgy: resume.
" 2.5.11.1.	Steel and sheetings.
" 2.5.11.2.	Ferroalloys.
" 2.5.11.3.	Wires.
" 2.5.11.4.	Non-ferric metallurgy.
" 2.5.11.5.	Pipes and smeltings.



A-1 STATISTICS FROM THE STATE OF BAHIA



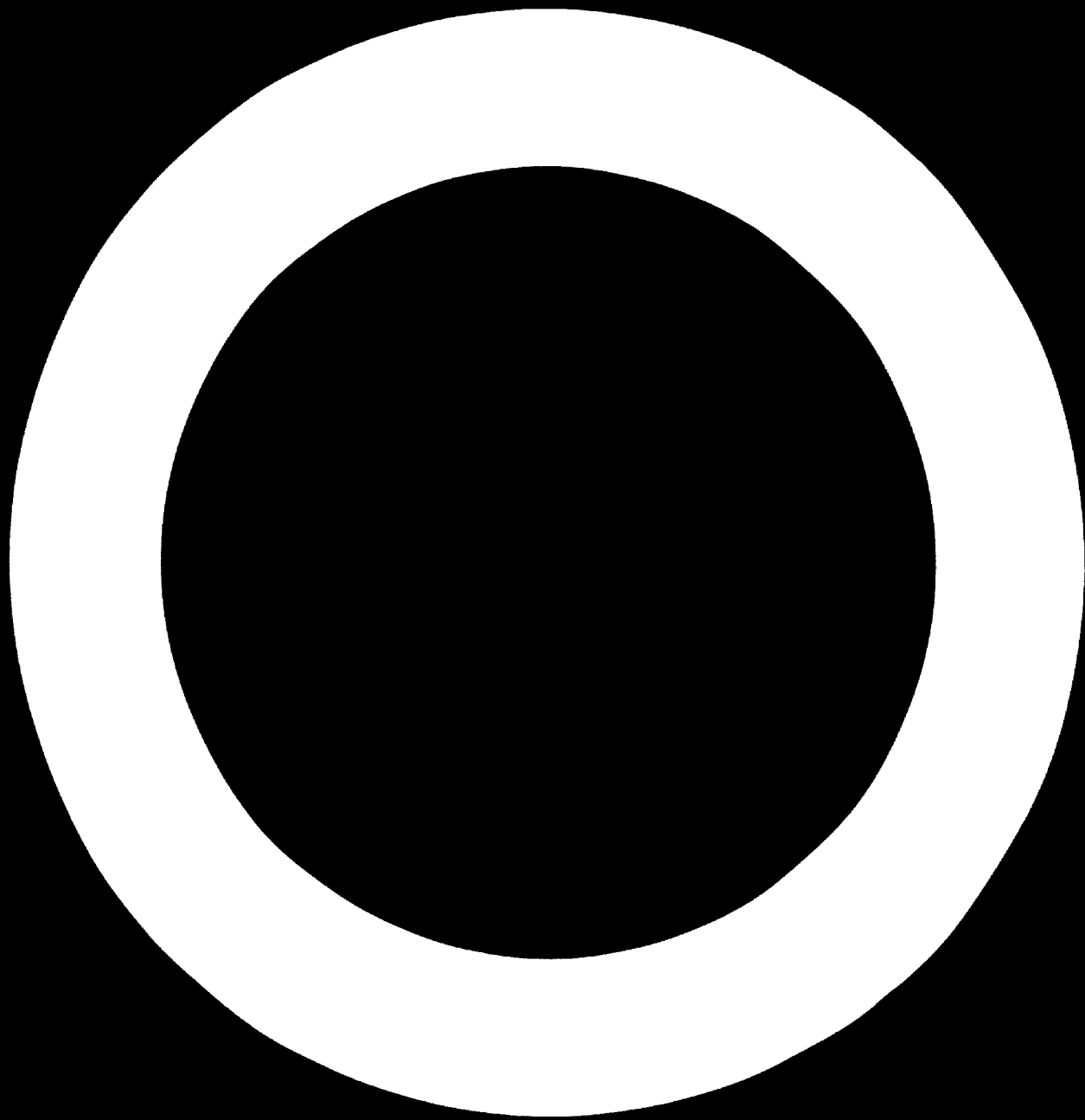


Table 1.4.1.RAILWAY PASSENGER TRAFFIC

<u>YEAR</u>	<u>INTERNAL TRAFFIC</u>		<u>SUBURBAN TRAFFIC</u>	
	<u>THOUSAND PASSENGERS</u>	<u>MILLIONS P-km</u>	<u>THOUSAND PASSENGERS</u>	<u>MILLIONS P-km</u>
1965	1,426	165	7,472	93
1966	1,150	121	6,950	102
1967	905	80	6,475	99
1968	597	69	6,390	101
1969	743	90	7,817	132

Source: Leste Railway

RAILWAY MERCHANDISE TRAFFIC

<u>YEAR</u>	<u>TRANSPORTED</u> <u>THOUSAND TONNES</u>	<u>MILLIONS TONNES</u> <u>PER KILOMETRE</u>	<u>AVERAGE DISTANCE</u> <u>IN KILOMETRES</u>
1965	419	118	424
1966	392	189	487
1967	290	155	535
1968	371	198	533
1969	460	247	539

Source: Leste Railway

**SALVADOR PORT MOVEMENT.-**  
**LOADING AND UNLOADING.-**

1960/1970

UNIT: Tonnes

Y E A R S	EXPORTS				LONG DISTANCE
	LONG DISTANCE	BIG CABOTAGE	SMALL CABOTAGE	TOTAL	
1960 .....	179.882	163.138	158.122	501.122	159.153
1961 .....	244.214	217.776	251.382	713.372	185.721
1962 .....	207.581	347.170	121.004	675.755	156.972
1963 .....	149.645	135.020	262.676	547.341	188.514
1964 .....	197.248	72.933	248.455	518.636	226.488
1965 .....	131.147	96.121	204.585	431.853	282.182
1966 .....	185.586	88.367	179.137	453.090	264.381
1967 .....	169.137	37.048	122.477	328.662	200.462
1968 .....	246.357	45.131	1.888	293.376	204.310
1969 .....	270.180	71.105	513	341.798	250.613
Difference with last year.	+ 9,67 %	+ 57,55 %	- 72,83 %	+ 16,50 %	+ 22,66 %

SOURCE: DOCAS DA BAHIA COMPANY.

SECTION 1

Table 1.4.3.

**SALVADOR PORT MOVEMENT.-**  
**LOADING AND UNLOADING.-**

1960/1970

Y E A R S	LONG DISTANCE	IMPORTS				GENERAL TOTAL
		TOTAL	LONG DISTANCE	BIG CABOTAGE	SMALL CABOTAGE	
1960 .....	159.153	501.122	159.153	43.914	30.254	734.443
1961 .....	185.721	713.372	185.721	46.007	28.303	973.404
1962 .....	156.972	675.755	156.972	36.677	10.384	879.788
1963 .....	188.514	547.341	188.514	14.414	11.899	762.168
1964 .....	226.488	518.636	226.488	3.651	15.568	764.343
1965 .....	282.182	431.853	282.182	4.643	10.756	729.434
1966 .....	264.381	453.090	264.381	6.207	16.621	740.209
1967 .....	200.462	328.662	200.462	6.698	2.000	537.822
1968 .....	204.310	293.376	204.310	2.910	2.902	503.498
1969 .....	250.613	341.798	250.613	8.209	3.317	603.937
Difference with last year.	+ 22,66 %	+ 16,50 %	+ 22,66 %	+ 182,09 %	+ 14,30 %	+ 19,94 %

SECTION 2

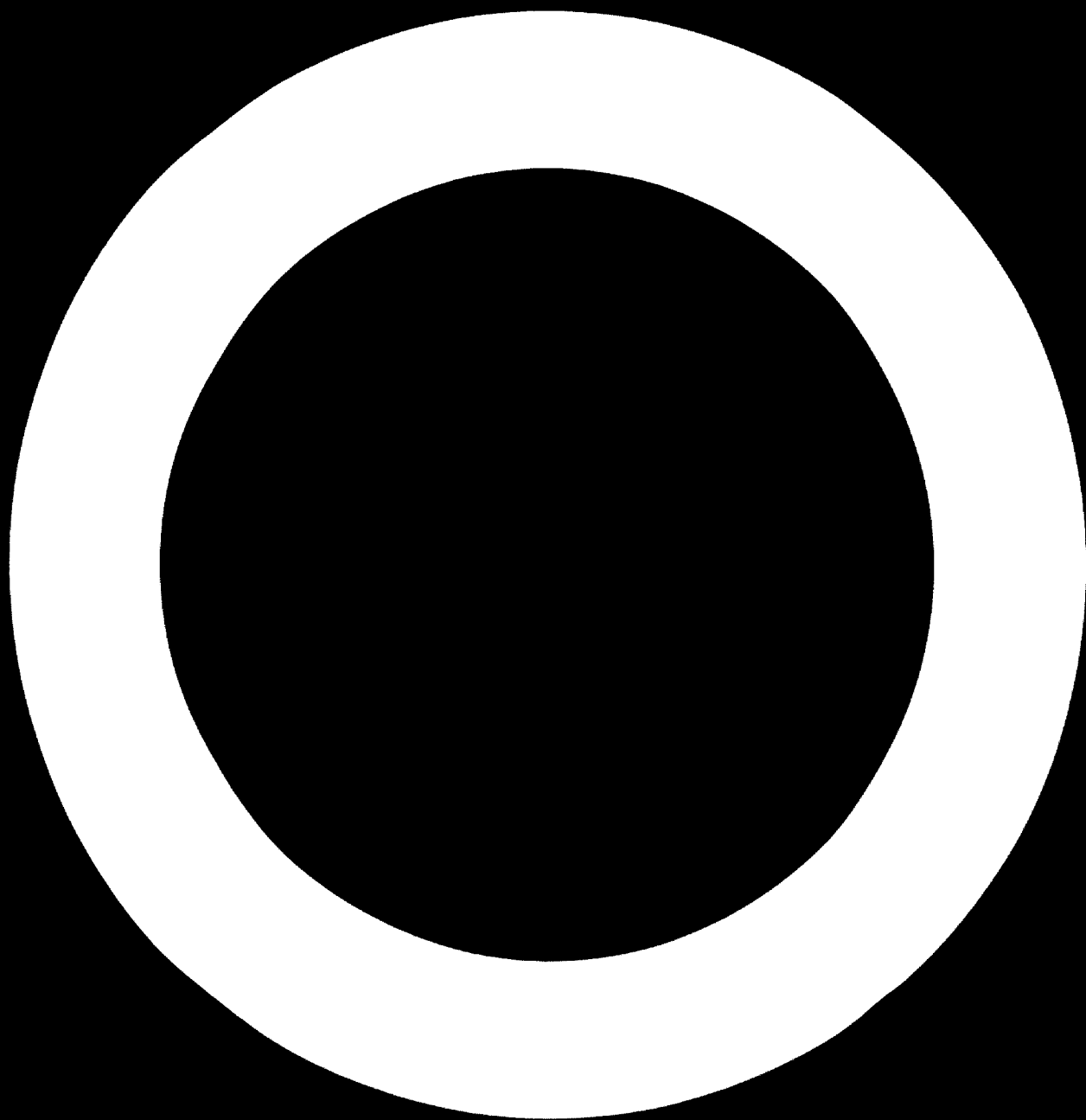


Table 1.4.4.

ILHEUS PORT TRAFFICSHIPS NUMBER

YEAR	CAME ALONGSIDE	ANCHORED	TOTAL
1.960	384	173	557
1.961	368	148	516
1.962	292	118	410
1.963	287	64	351
1.964	141	64	205
1.965	126	69	195
1.966	119	104	223
1.967	122	113	235
1.968	110	95	205
1.969	64	139	203

LOADING AND UNLOADING (tonnes)

YEAR	IMPORTATIONS	EXPORTATIONS	TOTAL
1.960	56,169	138,518	194,687
1.961	59,393	102,770	162,163
1.962	24,787	74,947	99,734
1.963	11,752	27,812	39,564
1.964	10,474	68,764	79,238
1.965	5,571	91,463	97,034
1.966	17,807	109,461	127,268
1.967	5,000	117,824	122,824
1.968	107,509	72,914	180,423
1.969	124,442	115,835	240,277

Source: Survey performed on Ilheus

Table 1.4.5.

WATER SUPPLY FARES : S E S E B

SERVICES AND CHARACTERISTICS	(1) - FARES FOR 1969			% OF INCREMENT AND PROPOSED FARES FOR 1970					
	NCF \$ Domi- ciles	NCF \$ Commer- cial	NCF \$ Indus- tries	%	NCF \$ Domi- ciles	%	NCF \$ Commer- cial	%	NCF \$ Indus- tries
1 - SAE's without upsettings, with simple treatment:									
1.1. - AMARGOSA	4,00	9,80	14,40	22	4,90	20	11,80	20	17,30
1.2. - COARACI	4,00	9,80	14,40	22	4,90	20	11,80	20	17,30
1.3. - IPIRA	4,00	9,80	14,40	22	4,90	20	11,80	20	17,30
1.4. - ITAPITANGA	4,00	9,80	14,40	22	4,90	20	11,80	20	17,30
1.5. - NAZARE	4,00	9,80	14,40	22	4,90	20	11,80	20	17,30
1.6. - RUY BARBOSA	4,00	9,80	14,40	22	4,90	20	11,80	20	17,30
1.7. - SANTA INES	4,00	9,80	14,40	22	4,90	20	11,80	20	17,30
2 - SAE's without upsettings, without conventional treatment									
2.1. - HARRO PRETO	4,00	9,80	14,40	20	4,80	20	11,80	20	17,30
2.2. - CRAVOLANDIA	4,00	9,80	14,40	20	4,80	20	11,80	20	17,30
2.3. - POÇO CENTRAL	4,00	9,80	14,40	20	4,80	20	11,80	20	17,30
3 - SAE's with upsettings, and simple treatment.									
3.1. - ITABERABA	5,70	13,90	20,00	21	6,90	20	16,70	20	24,00
3.2. - SEABRA	5,70	11,20	15,10	21	6,90	20	13,40	20	18,10
3.3. - SÃO SEBASTIÃO DE PASSI	6,00	14,00	20,00	20	7,20	20	16,80	20	24,00

Table 1.4.5. (Continued)

SERVICES AND CHARACTERISTICS	(1) FARES ON 1969				% OF INCREMENT AND PROPOSED FARES FOR 1970				
	NCR\$ Domini- ciles	NCR\$ Commer- cial	NCR\$ Indus- tries	%	NCR\$ Domini- ciles	%	NCR\$ Commer- cial	%	NCR\$ Indus- tries
4.- SAE's with upsetting and full treatment									
4.1. - ITABUNA	6,10	14,70	21,00	22	7,40	22	17,90	22	25,60
4.2. - SANTO ANTONIO DE JESUS	5,80	11,60	17,50	22	7,10	22	14,70	22	21,40
4.3. - UBAITABA	4,90	11,60	17,50	20	5,90	22	14,70	22	21,40
5.- SAE's located at low ad- quisitive power zones, and with deficient character- istics.									
5.1. - JEROMADO	4,70	11,20	15,10	20	5,60	20	13,40	20	18,10
5.2. - JITAUNA	4,70	11,20	15,10	20	5,60	20	13,40	20	18,10
5.3. - RIO DE CONTAS	4,70	11,20	15,10	20	5,60	20	13,40	20	18,10
5.4. - RIO REAL	4,70	11,20	15,10	20	5,60	20	13,40	20	18,10
5.5. - RIACHO DO JACUIPE	4,70	11,20	15,10	20	5,60	20	13,40	20	18,10
5.6. - URUGUCA	4,70	11,20	15,10	20	5,60	20	13,40	20	18,10
5.7. - VALENTE	4,70	11,20	15,10	20	5,60	20	13,40	20	18,10
5.8. - CALDAS DE CIPÓ	4,80	10,90	15,00	20	5,80	20	13,00	20	18,00



Table 1.4.5. (continued)

SERVICES AND CHARACTERISTICS	(1) FARES FOR 1969				% OF INCREMENT AND PROPOSED FARES FOR 1970				
	NCR\$ Domestic	NCR\$ Commercial	NCR\$ Industrial	%	NCR\$ Domestic	%	NCR\$ Commercial	%	NCR\$ Industrial
5.9. - GOVERNADOR MANGABEIRA	4,80	10,90	15,00	20	5,80	20	13,00	20	18,00
5.10. - INHAMBUPE	4,80	10,90	15,00	20	5,80	20	13,00	20	18,00
5.11. - RIBEIRA DO POBÓAI	4,80	10,90	16,70	20	5,80	20	13,00	20	20,00
5.12. - NOVA SOURE	4,80	10,90	15,00	20	5,80	20	13,00	20	18,00
6.- SAE's without upsettings and complete treatment									
6.1. - JEQUÉ	4,80	9,60	19,20	21	5,80	21	11,60	21	23,20
7.- SAE's IN AGREEMENT WITH CEPIAC (Proposed Fares).									
7.1. - ALMADINA					6,36		13,25		26,50
7.2. - BARRA DO RIOCHÁ					6,36		13,25		26,50
7.3. - AURELIANO LIMA					6,36		13,25		26,50
7.4. - GONCALVES					6,36		13,25		26,50
7.5. - UBATA					6,36		13,25		26,50
7.6. - CAMACA					6,36		13,25		26,50
7.7. - FLORESTA AZUL					6,36		13,25		26,50

Monthly fares.

WATER SUPPLY FARES

- S A E R -

DOMICILES	Properties below 200 m <sup>2</sup> of surface .....	11.04 NCr\$/month + 0.50 NCr\$ per m <sup>3</sup> overpassed
	Properties over 200 m <sup>2</sup> of surface .....	27.60 NCr\$/month + 0.50 NCr\$ per m <sup>3</sup> overpassed
COMMERCIAL		11.50 NCr\$/month + 0.50 NCr\$ per m <sup>3</sup> overpassed
INDUSTRIES		27.60 NCr\$/month + 0.50 NCr\$ per m <sup>3</sup> overpassed

SOURCE: Information given by SISEM

Table: 1.5.1.

AGRARIAN SURFACE, CULTIVATED AREA, NUM. OF WORKERS, NUM. OF EXPLOTATIONS

UNIT	1.960							1.968
	Bahia	Salvador	Ilhéus	Feira de Santana	Juazeiro	Rest of The State	Bahia	
Agrarian Surface	Ha. 17.666.218	835.287	1.836.912	895.022	433.526	13.665.471	23.000.000	
Cultivated Area	Ha. 2.163.004	95.850	568.237	71.792	67.212	1.359.911	2.116.346	
Num. of Workers	P. 1.819.712	135.047	170.551	144.799	81.315	1.288.000	---	
Num. of Exploitations	P. 181.473	27.508	29.337	34.605	23.442	266.581	367.000	

Source of Information: Agricultural Census of 1960 - Bahia (IBGE).

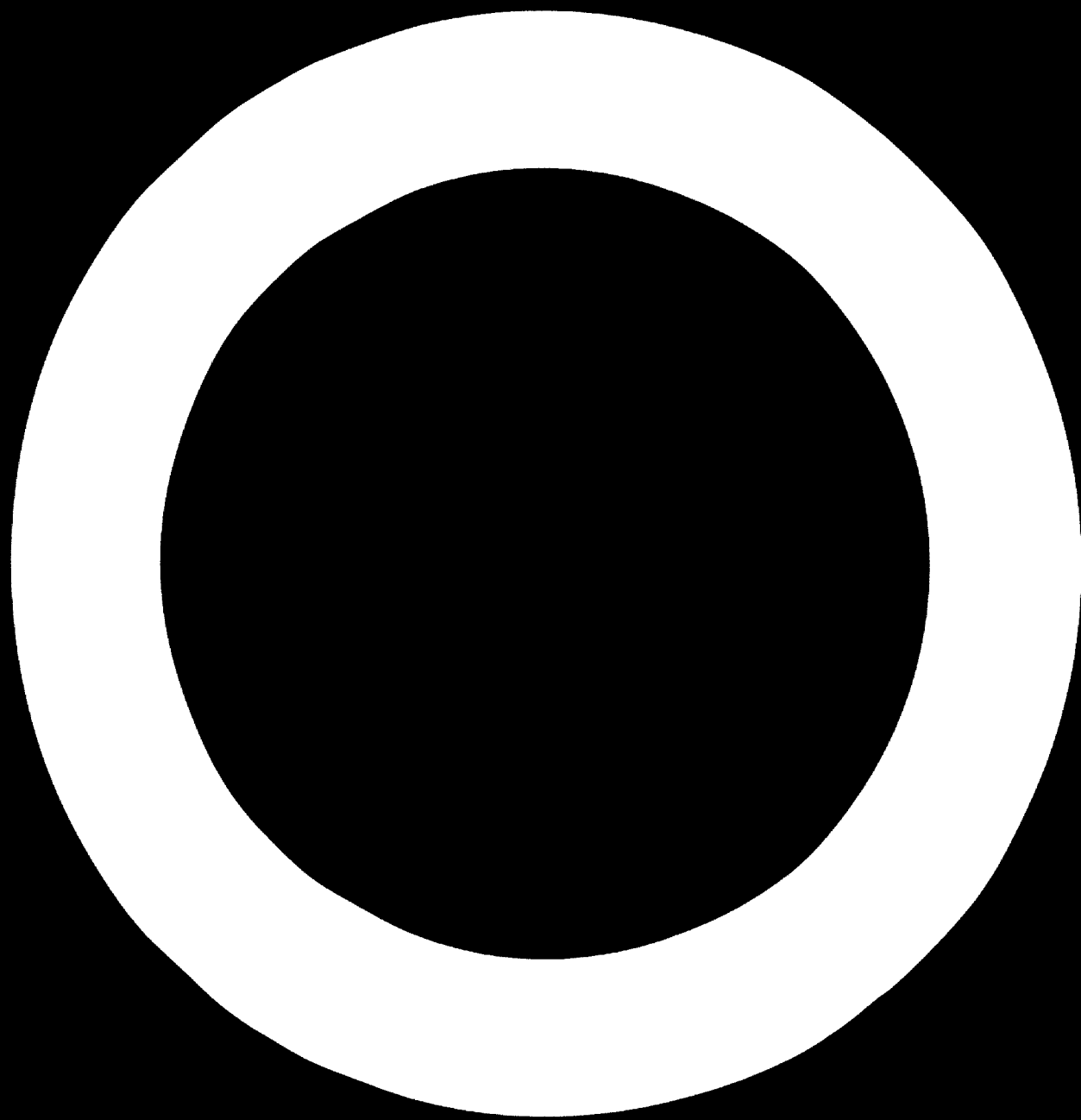
Table 1.5.2.

- AGRARIAN SURFACE DISTRIBUTION ACCORDING TO APPLICATIONS -

<u>TOTAL</u> .....	17,666,218	Hectares
<u>CULTIVATIONS AND PASTURES</u> .....	8,427,155	"
<u>Cultivations</u> .....	2,163,004	"
Permanent .....	857,691	"
Seasonal .....	1,305,313	"
<u>Pastures</u> .....	6,264,151	"
Natural .....	3,313,004	"
Artificial .....	2,951,147	"
<u>LANDS; UNCULTIVATED LANDS</u>		
<u>AND UNPRODUCTIVE SURFACE</u> .....	8,019,984	"
<u>Bushes</u> .....	4,612,774	"
Natural .....	4,452,127	"
Reforested .....	160,647	"
<u>Uncultivated lands</u> .....	3,384,110	"
<u>Unproductive surface</u> .....	23,100	"
<u>IRRIGATED LANDS</u> .....	1,219,079	"

..

Source: Agricultural census on 1960 - BAHIA (IBGE)



A-27

- AGRICULTURAL PRODUCTIONS -

PRODUCTS	UNIT	1960 (Census)						
		BAHIA	SALVADOR	ILHEUS	FEIRA DE SANTANA	JUAZEIRO	REST OF STATE	BAHIA
Cocoa	Tn	161	0,043	143	----	----	17	1
Coffee	Tn	77	3	10	0,709	0,921	61	
Tree cotton	Tn	1.750	----	----	----	----	----	
Plant cotton	Tn	31.408	----	----	45	1.314	30.049	
Banana	Bunch	12.352	3.002	2.373	355	410	6.210	18.1
Bahian Coconut	100u.	769	219	247	5	6	291	1.7
Orange	100 u.	1.607	231	407	35	48	884	2.9
Mango	100u.	259	36	1	4	18	199	0
Sisal	Tn	1.187	-----	----	3	36	1.147	6.7
Pineapple	Fruit	2.812	91	1.009	----	143	1.567	15.2
Ababora	100u.	23	0,029	0,028	----	1	23	--
Alpin	Tn	145	9	12	----	0,598	124	7
Garlic	Tn	0,770	----	----	----	0,005	0,765	
Rice	Tn	32	0,010	0,463	----	0,094	32	

SECTION 1

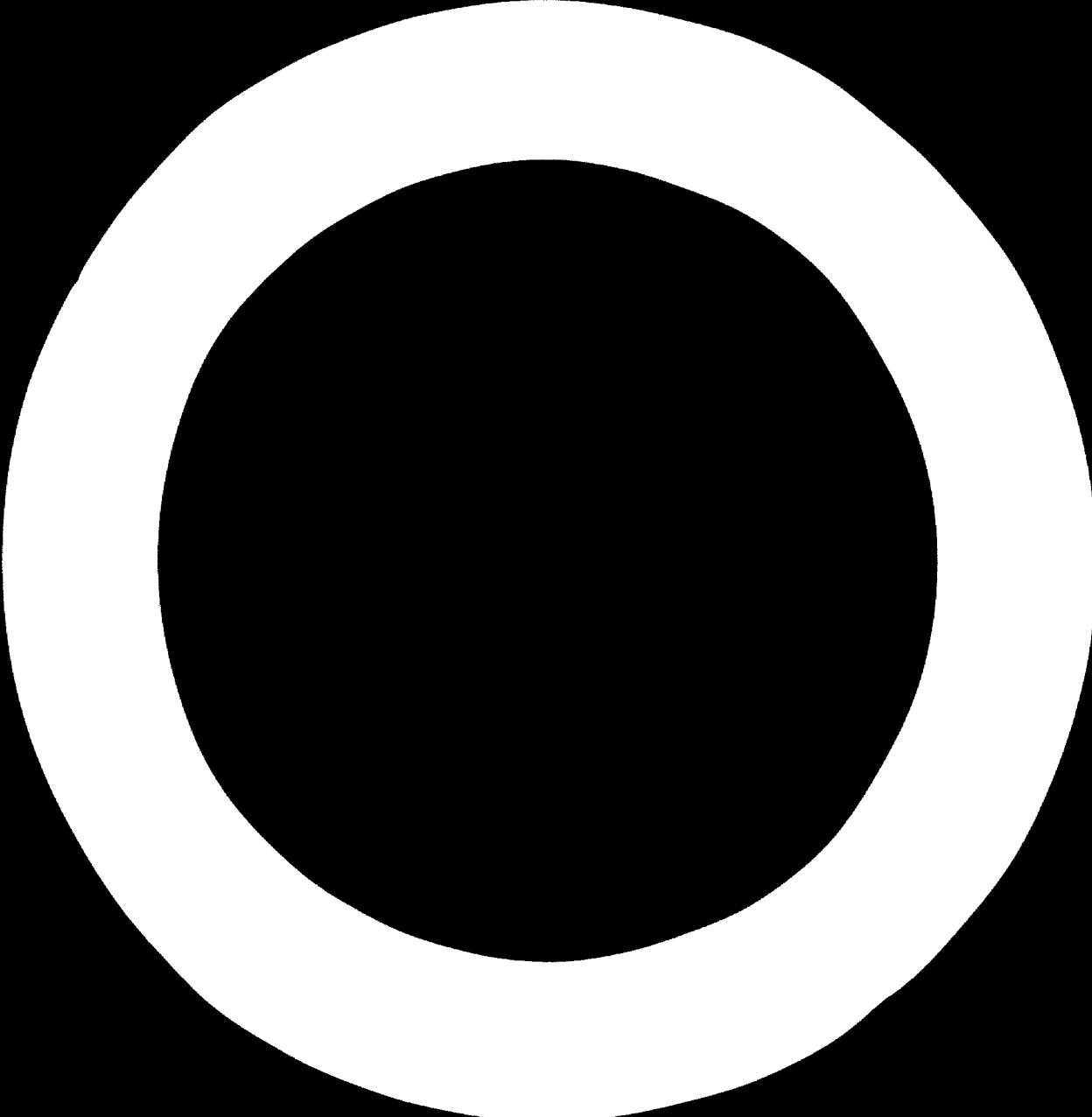
Table 1.5.3

## - AGRICULTURAL PRODUCTIONS -

		Latest data: Year 1968						
	JUAZEIRO	REST OF STATE	BAHIA	SALVADOR	ILHEUS	FEIRA DE SANTANA	JUAZEIRO	REST OF STATE
	----	17	144	0,044	115	----	----	28
	0,921	61	23	0,575	2	0,025	----	21
	----	----	3	----	----	0,020	1	2
	1,314	30,049	77	----	----	----	0,690	07
	410	6,210	18,133	2,897	5,093	431	602	9,103
	6	291	1,750	361	276	21	3	1,033
	48	384	2,992	520	490	107	31	1,842
	18	199	971	126	19	71	34	719
	36	1,147	6,787	----	----	531	10	6,249
	143	1,567	15,220	241	2,572	8,089	406	2,910
	1	21	----	----	----	----	325	----
	0,598	124	758	40	18	15	1	654
	0,005	0,765	1	----	----	----	0,024	1
	0,094	32	66	0,233	2	----	0,180	61

## SECTION 2

INDUSTRIAL SURVEY OF BAHIA





## - AGRICULTURAL PRODUCTIONS -

PRODUCTS	UNIT	1960 (Census)						BAHIA
		BAHIA	SALVADOR	ILHEUS	FEIRA DE SANTANA	JUACEIRO	REST OF STATE	
Spurge	Tm	53	----	----	2	5	50	156
Tomato	Tm	2	1	0,039	----	0,011	0,982	13
Caju	100 u.	132	19	0,460	77	2	82	750
Amendoim with rind.		----	----	----	----	----	----	7
Alfalfa		----	----	----	----	----	----	0,0

## - AGRICULTURAL PRODUCTIONS -

			Latest data: year 1968					
FEIRA DE SANTANA	JUACEIRO	REST OF STATE	BAHIA	SALVADOR	ILHEUS	FEIRA DE SANTANA	JUACEIRO	REST OF STATE
	5	50	148	----	----	1	----	147
	0,011	0,962	13	5	0,080	0,491	----	3
	2	82	760	123	146	211	----	274
	----	----	3	0,306	0,001	1	----	1
	----	----	0,020	----	----	----	----	----

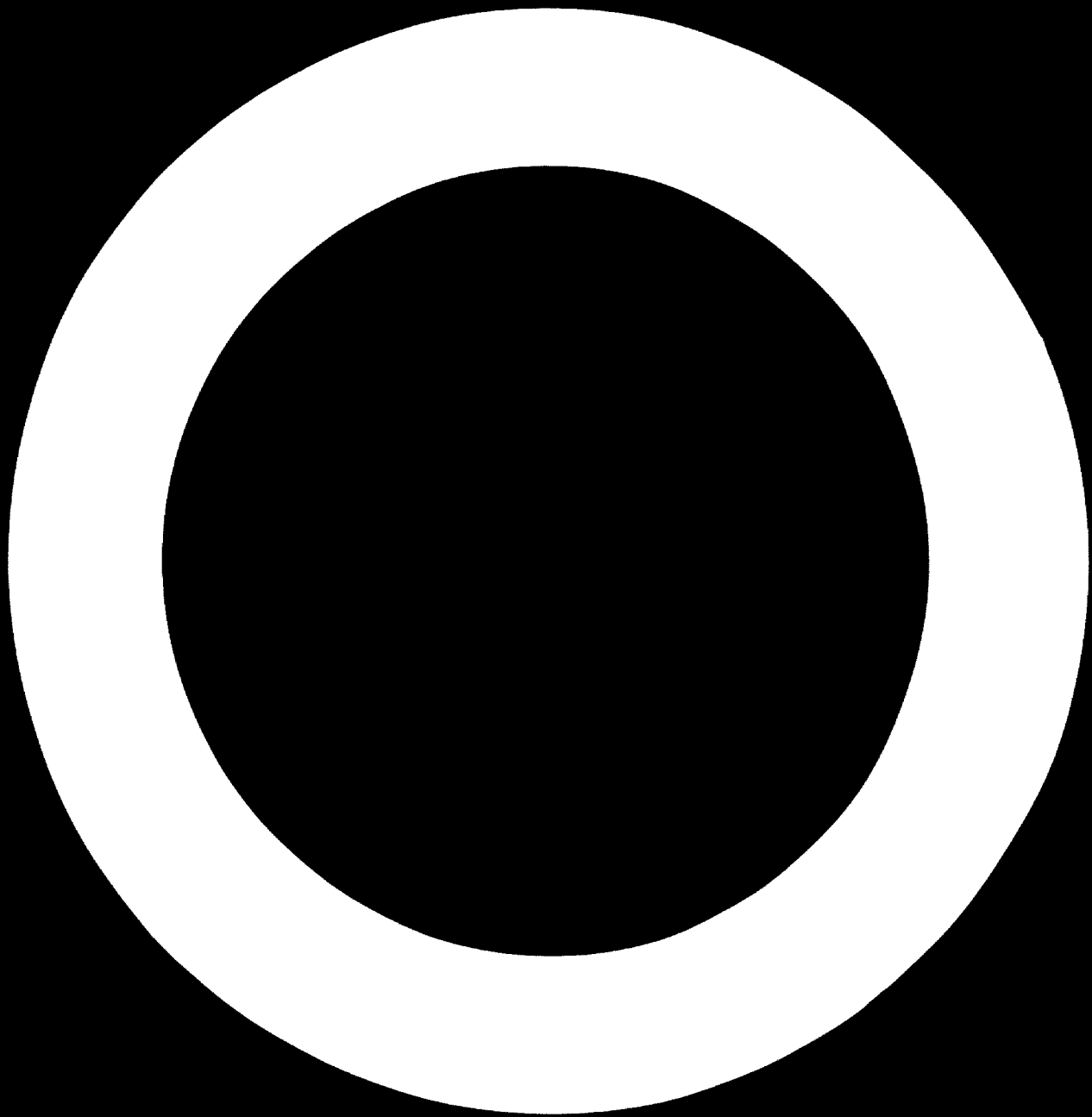


TABLE: 1.5.4.

PRINCIPAL PRODUCTS OF VEGETAL EXTRACTION.

PRODUCTS	1965		1966		1967	
	Quantity (tn.)	Value (NCr.)	Quantity (tn.)	Value (NCr.)	Quantity (tn.)	Value (NCr.)
RUBBER - Hevea	300	40.130	359	100.940	296	299.060
- Latex	2.130	441.103	2.051	864.428	3.102	1.524.815
- Mangabeira	79	15.867	14	3.520	14	4.800
- Manicoba	2	300	2	450	1	600
WAXES - Carnauba	539	347.988	403	328.500	235	328.174
- Licuri	185	93.800	236	140.494	219	142.040
FIBERS - Caroa	702	65.904	594	80.788	479	71.193
- Piaçava	18.094	5.653.948	19.566	12.520.258	18.965	11.714.263
- Tucum	3	3.378	4	5.485	4	6.433
OILY GOODS - Babaçu	205	47.156	210	40.918	230	61.725
- Licuri (caquilha)	7.582	1.676.117	7.265	1.374.467	9.550	2.455.571
- Tucum (amand)	53	2.481	54	2.694	44	2.530
FOOD - Cashew chestnut	395	36.199	421	49.586	633	80.062
DYEING - Gangico cover	3.074	60.376	2.557	68.037	2.509	93.491
AROMATIC, MEDICAL AND TOXICS - Ipecacuana or paaja	10	6.076	11	7.278	10	3.971
OTHERS - Paines	179	30.980	166	31.737	165	34.141

SOURCE OF INFORMATION: Technical Team for Cattle-Agriculture Statistics.

Table: 1.5.5.

PRINCIPAL FORESTAL PRODUCTIONS

YEARS	WOOD		CHARCOAL	
	Quantity (m3.)	Value (N.Crs.)	Quantity (m3.)	Value (N.Crs.)
1.965	15.470.614	36.198.650	52.716	1.070.697
1.966	17.240.321	54.284.122	54.607	1.712.450
1.967	17.950.171	71.119.640	54.764	2.180.883

Source of information: Technical Team of Agriculture - Cattle Statistics

## - LIVESTOCK RESOURCES -

LIVESTOCK CENSUS	UNIT	1.960 (Census)						BAHIA
		BAHIA	SALVADOR	ILHEUS	FEIRA DE SANTANA	JUACEIRO		
Cattle	Unit	4.595	174	452	247	200	3.696	8.4
Horses	"	452	23	22	37	18	357	
Donkeys	"	344	11	9	11	57	256	
Mules	"	264	22	73	12	22	135	
Pigs	"	1.600	60	116	123	39	1.216	5.0
Sheep	"	1.700	24	13	128	266	1.270	2.9
Goats	"	2.200	5	7	86	525	1.577	3.4
Fowl	"	7.510	578	787	846	---	5.299	15.3
Number of establishments		918	12	7	11	---	---	---
Number of workers		1.819	135	170	144	---	---	---
Slaughtered cattle		66	2	9	4	---	---	---
Slaughtered pigs		164	3	7	7	---	---	6
Milk products		1.641	53	151	81	---	---	3.0
Eggs		122	6	7	15	---	---	2

Source: Bahian Agricultural Census 1960 (IBGE) Technical Team for Agropecuary St.

## - LIVESTOCK RESOURCES -

			Latest data: year 1.968					
IRA de SANTANA	JUACEIRO		BAHIA	SALVADOR	ILHEUS	FEIRA DE SANTANA	JUACEIRO (1.967)	
17	200	3.696	8.433	227	952	579	280	6.395
17	18	357	961	31	53	83	30	764
1	57	256	949	33	38	57	86	735
2	22	135	891	49	126	62	38	616
3	39	1.216	5.630	226	510	242	166	4.486
3	266	1.270	2.979	46	51	96	361	2.425
6	525	1.577	3.436	28	28	107	550	2.723
6	---	5.299	15.336	---	---	---	---	---
11	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---
4	---	---	---	160	79	92	---	---
7	---	---	634	77	59	42	---	---
11	---	---	3.000	---	---	---	---	---
15	---	---	265	---	---	16	---	---

Technical Team for Agropecuary Statistics.

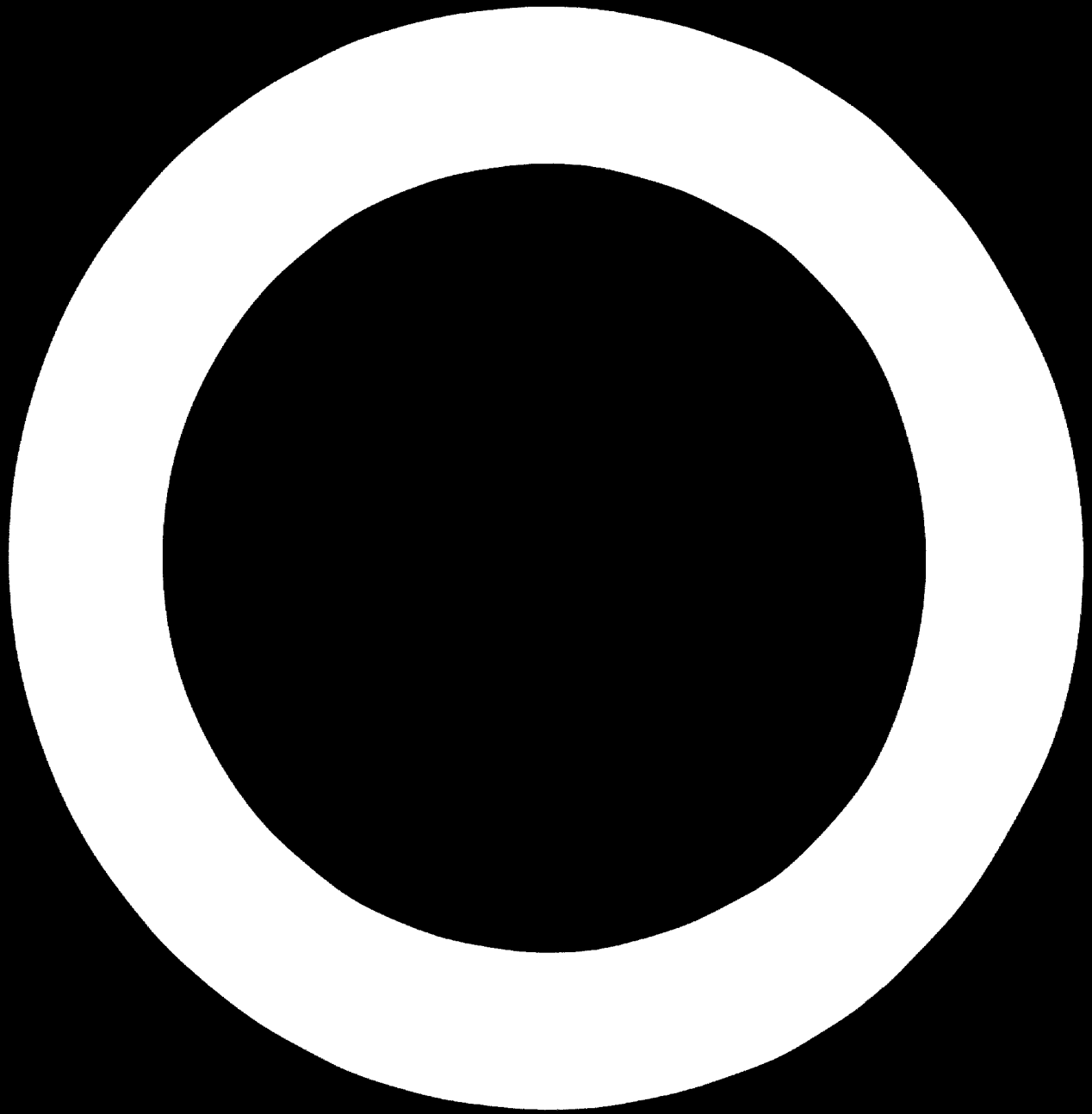




Table 1.5.7.**- DATA FROM THE FISHING SECTOR -**

SPECIES	UNIT	1.965	1.966	1.967
Fishes	Tn.	10.655	11.232	10.260
Shell-fishes	Tn.	2.781	2.768	2.822
Molluscs	Tn.	345	391	396
Chelonians	Tn.	11	16	13
Others	Tn.	77	---	---
<b>TOTAL VALUE</b>	<b>1.000Crs</b>	<b>6.717</b>	<b>9.418</b>	<b>13.069</b>
Num. of Boats Total	Each	2.180	2.226	2.174
Rowboats	"	1.791	1.864	1.755
Vessels	"	364	413	409
Motorboats	"	25	9	10
Total loading Capacity	Tn.	1.893	2.015	1.932
Num. of fisher men	Each	26.239	28.345	28.425

Source of information: Technical team for agriculture-cattle  
Statistics.

PRODUCTION OF SAVAGE ANIMAL SKINS IN BRAZIL AND BAHIA ON 1967

	"ARIRANHA"	"CAPIVARA"	LANY	BOCCUPINI	DEER	MUSTELID	LIZARD	TOTAL
<u>BAHIA</u>								
Quantity (units)	159	1,740	20,092	17,033	0,027	1,096	260,016	-
Value (MCR\$)	6,553	6,422	57,705	42,010	55,243	6,006	263,270	919,405
<u>BRAZIL</u>								
Quantity (units)	4,594	102,114	136,680	687,825	356,953	357,902	1,284,359	
Value (MCR\$)	249,551	206,379	4,330,172	1,306,033	551,661	4,655,571	1,388,291	12,695,658

SOURCE: BRAZILIAN INSTITUTE OF STATISTICS

Table: 1.5.9.

METALLIC AND NON-METALLIC MINERAL PRODUCTION

MINERALS OF:	1-966		1-967		1-968	
	Quantity (Tm.)	Value (1.000 N. Cr.)	Quantity (Tm.)	Value (1.000 N. Cr.)	Quantity (Tm.)	Value (1.000 N. Cr.)
Beryllium	7	4	12	9	11	13
Lead	180.550	1.658	200.502	2.779	230.000	5.613
Copper	2.000	3	1.015	2	2.623	
Columbite	4	20	5	30	4	20
Chrome	22.488	318	13.223	177	13.514	50
Manganese	47.817	460	9.989	110	3.429	190
Amianth	115.700	681	81.358	406	---	---
Baryta	65.293	315	86.005	407	99.880	2.326
Rock Crystal	63	432	60	451	69	768
Talc	122.903	2.052	105.656	2.402	132.392	7.274
Marble	6.325	428	6.270	538	7.731	448
	5.534	56	2.238	50	5.782	189

Source of information: Brazilian Institute of Statistics

Table: 1.5.10.

PETROLEUM PRODUCTION

(According to Principal Fields)

PRODUCING FIELDS	QUANTITY IN M3.		
	1.966	1.967	1.968
TOTAL . . . . .	6.584.420	7.812.034	8.191.933
Miranga . . . . .	1.235.257	2.360.812	2.273.321
Agua Grande . . . . .	2.089.975	1.897.697	2.147.470
Buracica . . . . .	1.072.806	1.097.163	1.155.346
Dom Joao . . . . .	709.663	879.973	721.430
Taquípe . . . . .	638.617	601.360	564.348
Candeias . . . . .	471.997	468.721	426.926
Fazenda Imbé . . . . .	94.110	107.752	133.454
Others . . . . .	271.995	398.556	605.738

Source of information: Petroleo Brasileiro, S. A. (Petrobras).

Table: 1.5.11.

NATURAL GAS PRODUCTION

(According to principal fields)

PRODUCING FIELDS	Quantity in 1000 m3.		
	1.966	1.967	1.968
TOTAL .....	788.569	874.647	964.708
Agua Grande.....	342.466	313.985	374.077
Miranga.....	67.280	193.623	218.734
Taquipe. ....	119.779	130.705	131.544
Candeias.....	101.205	88.650	127.360
Dam Joao....	22.497	21.508	25.411
Fazenda Imbé.....	7.773	11.809	15.608
Araçás.....	6.069	9.776	14.931
Mata de Sao Joao.....	15.554	17.708	12.032
Buracica.....	8.756	9.004	11.608
Fazenda Panelas.....	7.646	16.572	10.493
Others.....	69.544	61.211	23.008

Source of information: Petroleo Brasileiro, S. A. (Petrobras).

Table 1.7.1.

FUNDED BANKING BALANCES ON DEC. 31st. 1968

(figures in millions of cruzeiros)

	BANKING		CREDIT BANKING		FINANCIAL BANKING	
	BRAZIL	BAHIA	BRAZIL	BAHIA	BRAZIL	BAHIA
LOANS FOR ACQUISITION OF RURAL AND CATTLE PRODUCTION	4,509	0,283	4,245	0,263	4,510	0,546
LOANS FOR INDUSTRIAL PRODUCTION	6,006	1,165	2,507	0,091	1,399	0,074
LOANS FOR AGRICULTURAL AND INDUSTRIAL PRODUCTS MARKETING	7,573	0,269	3,803	0,112	1,770	0,116
OTHER LOANS	2,773	0,70	5,360	0,178	3,000	0,092
TOTAL IN LOANS	20,861	2,427	14,922	0,771	10,779	0,828
OTHER CREDITS GIVEN TO PUBLIC ENTERPRISES	31,005	5,544	15,900	0,275	12,050	0,505
TOTAL IN LOANS AND CREDITS	55,663	1,734	33,891	1,006	21,772	0,873

PERCENTAGES FOR THE STATE OF BAHIA AGAINST THE TOTAL OF BRAZIL.

S e c t o r	Meat Product	Loans	Official loans	Private loans
Primary	6.7	6.6	6.3	6.6
Secondary	1.66	2.75	3.65	2.15
Third	6.25	6.8	3.25	3.8
Other loans	6.15	6.28	5.2	6.1

SOURCE: Own made elaboration from table 1.7.1. data and from Getulio Vargas Foundation Report.

-----

BAHIA MANUFACTURING ESTABLISHMENTS DISTRIBUTIONBY DIMENSIONS

(1960 Census)

<u>By num. of workers</u>	<u>Fixed num.</u>	<u>Employed Personnel</u>
From 1 to 4 workers	4,772	12,965
From 5 to 19 workers	966	8,696
From 20 to 49 workers	123	4,323
From 50 to 99 workers	42	2,678
From 100 to more workers	47	21,361
 <u>By established power</u>		
Without any power set or not declared	5,072	27,084
Less than 10 CV.	444	2,783
From 10 to 50 CV.	292	3,896
From 50 to 250 CV.	99	5,337
From 250 and on CV.	43	10,873
 <u>By production value</u>		
Under a million of Cr. \$	4,634	13,707
From 1 to 5 million Cr. \$	1,015	8,099
From 5 to 25 " "	215	4,135
From 25 to 50 " "	36	2,409
From 50 and on " "	50	20,663



NUMBER OF ESTABLISHMENTS AND PERSONNEL OCCUPIED  
IN PROCESSING INDUSTRIES

	1960		1967 *	
	<u>Establishments</u>	<u>Employed personnel</u>	<u>Establishments</u>	<u>Employed personnel</u>
-Non-metallic minerals	1,894	8,525	259	5,980
-Metallurgy	55	1,033	69	2,232
-Mechanics	6	47	6	271
-Electr. and communic. mat.	4	82	7	141
-Transportation material	35	707	33	2,012
-Wood	208	1,633	126	2,411
-Furniture	512	1,903	94	1,001
-Paper and cardboard	7	219	12	518
-Rubber	8	110	37	497
-Skins and leather	309	1,593	31	808
-Chemistry	57	3,497	72	6,179
-Medicinal and pharmac. products	14	90	9	111
-Perfumes and soaps	124	403	24	351
-Plastic items	--	--	7	139
-Textile	104	4,311	162	6,202
-Clothing, shoes and ready-made	317	1,858	64	1,690
-Food products	1,822	9,950	219	7,169
-Beverages	217	1,404	58	1,601
-Tobacco	56	3,179	120	2,304
-Graphic arts	124	1,820	79	1,620
-Several	48	172	13	300
<b>T O T A L . . . . .</b>	<b>5,921</b>	<b>42,643</b>	<b>1,506</b>	<b>41,551</b>

Note.- This does not include the totaly of establishments but those of greater entity.

PEOPLE EMPLOYED IN THE INDUSTRY ACCORDING TO GEOGRAPHICAL AREAS

	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1965</u>
Salvador	10,832	13,682	12,412	13,997
Peira do Sertão	214	949	2,051	2,704
Ilhéus	606	1,071	657	727
Itabuna	252	993	948	660
Jequié	294	420	506	523
Jussara	406	566	439	354
Vitória da Conquista	70	398	622	341
Rest of the State	16,258	21,211	32,388	39,363
Bahia	28,932	42,290	50,023	56,669

a Does not include construction nor electrical energy service.

Table 1.0.4.

**PERCENTUAL DISTRIBUTION OF PEOPLE EMPLOYED IN THE INDUSTRY ACCORDING TO GEOGRAPHICAL AREAS**

	<u>1940</u>	<u>1950</u>	<u>1960</u> <sup>m</sup>	<u>1965</u> <sup>m</sup>
Salvador	37.4	33.3	24.7	25.2
Feira de Santana	0.7	2.2	4.1	4.5
Other possible development foundations	5.7	8.2	6.4	4.6
Rest of the State	56.2	57.3	64.8	65.7
T O T A L	100.0	100.0	100.0	100.0

<sup>m</sup> Including neither construction nor electrical energy service.

**EMPLOYMENTS ALREADY CREATED OR NEAR TO BE CREATED BY ACTION OF SUBSIDIARIES ACCORDING**

**TO GEOGRAPHICAL AREAS ON SEP. 23rd 1970**

	<b>IN PRODUCTION</b>	<b>ON ESTABLISHMENT</b>	<b>ON PROJECT</b>	<b>TOTAL</b>
Salvador	1.306	537	654	2.377
Aracá	4.472	4.300	3.776	12.628
Total in Espirito Santo	7.557	7.248	4.654	19.459
Pólo de Saneamento	314	1.329	370	2.013
Rest of the State	1.020	1.279	566	2.865
<b>TOTAL</b> .....	<b>8.891</b>	<b>9.856</b>	<b>5.590</b>	<b>24.337</b>

A-2 STATISTICS FROM BRAZIL

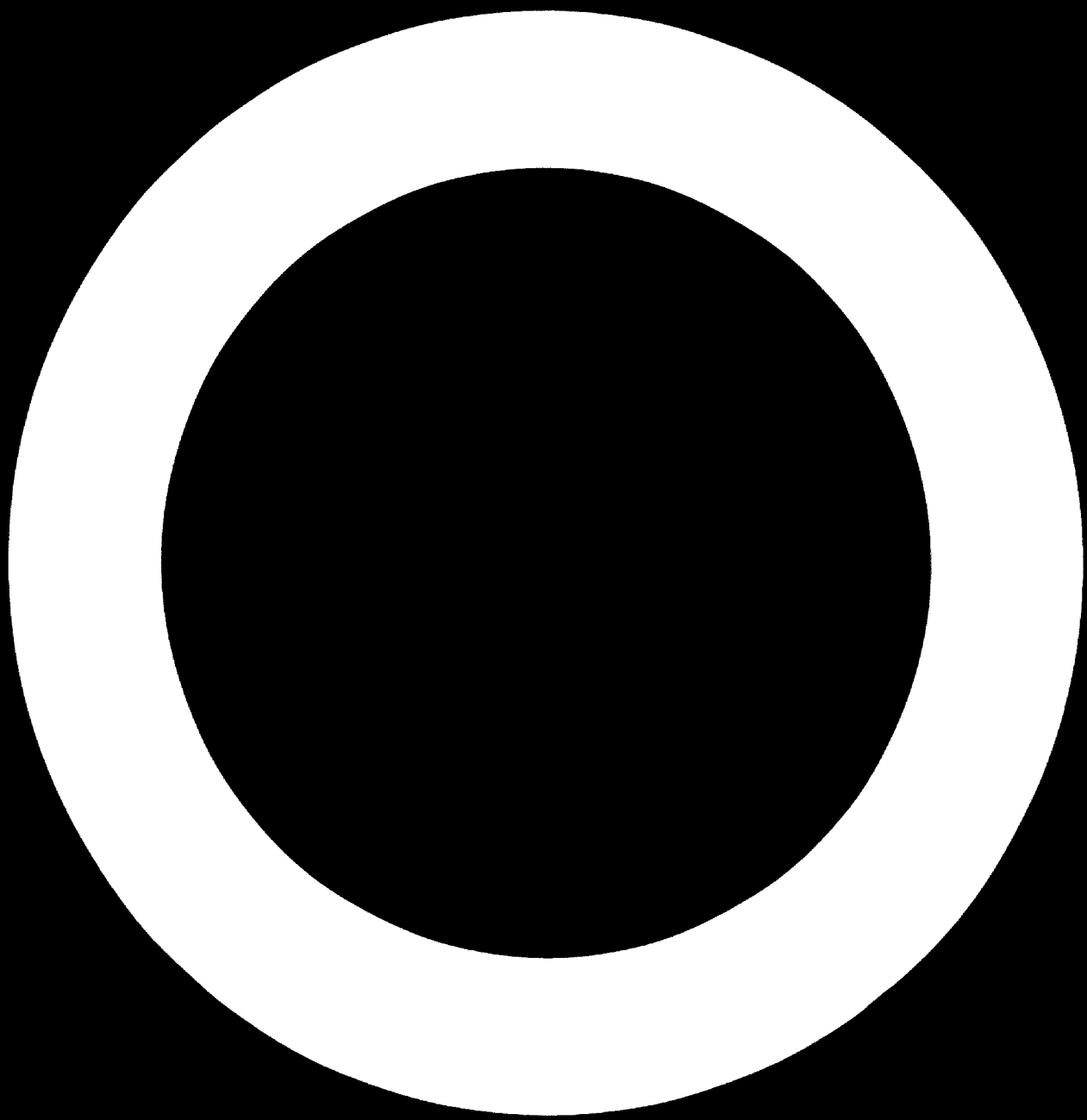


TABLE 2.2.1.

**BRAZIL POPULATION EVOLUTION**

(in millions of inhabitants)

	1872	1890	1900	1920	1940	1950	1960	1970 <sup>x</sup>
N	0,33	0,48	0,69	1,44	1,46	1,84	2,60	3,52
NE	4,64	6,00	6,75	11,24	14,43	17,97	22,43	27,30
SE	4,02	6,10	7,83	13,65	18,35	22,55	31,07	41,48
S	0,72	1,43	1,80	3,54	5,73	7,84	11,87	18,04
CO	0,22	0,32	0,37	0,76	1,26	1,74	3,00	4,96
B	9,93	14,33	17,44	30,63	41,23	51,94	70,97	95,30

**NOTE:** The respective States for each region are the following:

**NORTH:** Rondônia, Acre, Amazonas, Roraima, Pará, Amapá.

**NORTHEAST:** Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco e Fernando de Noronha, Alagoas, Sergipe, Bahia.

**SOUTHEAST:** Minas Gerais, Espírito Santo, Serra das Amares, Rio de Janeiro, Guanabara, São Paulo.

**SOUTH:** Paraná, Santa Catarina, Rio Grande do Sul.

**CENTRE-WEST:** Mato Grosso, Goiás e Distrito Federal.

x = 1970 estimated.

**SOURCE:** Statistics 1969 year-book.

TECHIBERIA

U. N. O. P. / U. N. I. O. O.

INDUSTRIAL SURVEY OF BRAZIL

PERCENTUAL POPULATION DISTRIBUTION

	1872	1920	1960	1970 <sup>a</sup>
N	3.3	4.7	3.7	3.7
NE	46.7	36.7	31.6	28.6
SE	40.5	44.6	43.8	43.5
S	7.3	11.5	16.7	19.0
CV	2.2	2.5	4.2	5.2
B	100.0	100.0	100.0	100.0

Source: Statistics 1969 year-book

<sup>a</sup> Estimated



POPULATION OF CAPITALS AND PERCENTAGES AGAINST TOTAL OF THE STATE

- THOUSANDS OF INHABITANTS -

STATES CAPITALS	1 9 7 2		1 9 2 0		1 9 6 0		1 9 7 0 <sup>a</sup>	
	Thous.	%	Thous.	%	Thous.	%	Thous.	%
Belen	662	22	236	24	402	26	625	30
Portaleon	102	6	78	6	514	15	960	24
Escife	117	14	238	11	797	19	1.195	24
Salvador	129	9	283	8	655	11	975	14
Rio de Janeiro	275	100	1.158	100	3.387.7	100	4.394	100
São Paulo	31	4	579	13	3.888	29	6.359	36
Curitiba	12	10	79	11	361	4	787	8
Porto Alegre	84	10	179	8	641	12	1.026	15
Buenos Aires	-	-	-	-	142	100	440	100
São Paulo	-	-	55	1	693	7	1.333	11

SOURCE: Statistics Year-Book 1969

<sup>a</sup> 1970 estimated  
in State of Guanabara

SILVICULTURE: Tree fellingWood production

(In millions of cubic metres)

	1965	1966	1967	10 <sup>6</sup> 1967 H.Cr. \$
N	1.2	1.8	1.8	3.0
NE	41.9	42.0	44.2	125.6
SE	41.4	37.2	38.5	117.6
S	41.7	40.3	41.6	105.3
CV	9.0	9.3	9.5	30.3
B	135.2	130.6	135.6	382.3

Source: Statistics 1969 year-book

SILVICULTURE: CharcoalProduction in thousand tonnes

	1965	1966	1967	10 <sup>6</sup> 1967 N.Cr. ₤
N	11	10	9	0.6
NE	184	198	193	9.7
SE	745	730	648	22.9
S	30	31	30	1.6
CW	10	22	26	2.6
B	980	991	906	37.4

Source: Statistics 1969 year-book

SILVICULTURE: Other productsProductions in thousands tonnes

Products	1965	1966	1967	1967 10 <sup>6</sup> N. Cr. \$
Caoutchouc	38.4	30.8	29.8	29.4
Waxes	12.9	12.4	17.6	16.4
Rubbers	7.0	5.0	6.4	4.7
Fibres	37.1	41.4	36.7	17.6
Oily goods	238.6	225.6	232.4	62.7
Dyeings	10.2	9.5	7.6	0.3
Food	178.1	192.1	164.9	38.8
Aromatic	0.1	0.1	0.4	0.2

Source: Statistics year-book 1969

Table: 2.2.7.HUNTING: Savage animals skins and leathers production(in millions of pieces)

	1965	1966	1967	10 <sup>6</sup> 1967 N. Cr. B
Mammals	1.26	1.29	1.29	6.65
Reptils	0.84	1.75	2.04	6.04

Source: Statistics 1969 year-book

F I S H I N G : Production(in thousand tonnes)

	1966	1967	1968	1968 10 <sup>6</sup> M.Cr. \$
Fishes	368	361	414	219.6
Shell-fishes	58	55	71	76.3
Others	9	12	15	6.9
<b>Total</b>	<b>435</b>	<b>428</b>	<b>500</b>	<b>302.8</b>

Source: Statistics 1969 year-book

PRINCIPAL CULTIVATIONS PRODUCTIONS

a) Permanent cultivations.

DESCRIPTION	PRODUCT	UNIT	1966		
<u>Industrial Plants</u>	Olive	Thousand Tns.	0,8		
	Cocoa	" "	170,4		
	Coffee	Millions Sacks	37.600,0	19.	
	Tea	" "	6,5		
	Sisal	" "	237,4		
	Tungue	" "	12,6		
	Grape	" "	322,6		
	<u>Fruits</u>	Orange	Millions pieces	11.766,0	12.
		Lemon	" "	1.009,0	1.
		Tangerine	" "	1.906,0	1.
Abacate		" "	469,0		
Banana		Millions clusters	375,0		
Caju		Millions pieces	3.393,0	4.	
Caqui		" "	196,0		
Fig		" "	408,0		
Maca		" "	113,0		
Mango		" "	1.951,0	2.	
Marmelo		" "	166,0		
Pear		" "	351,0		
Peach		" "	757,0	1.	
Bahian Coconut		" "	691,0		
M't	Thousand Tns.	0,6			
Pepper	" "	9,8			

Source: Statistics 1969 year-book

## SECTION 1

PRINCIPAL CULTIVATIONS PRODUCTIONS

## Permanent cultivations.

1.966	1.967	1.968	1.968 10 <sup>6</sup> N.C. \$
0,8	1,0	1,0	0,8
170,4	194,7	149,3	220,0
37.600,0	19.400,0	23.200,0	
6,5	6,4	4,6	9,6
287,4	319,0	328,3	71,8
12,6	20,4	16,9	2,5
522,6	500,8	539,0	110,1
11.766,0	12.523,0	13.586,0	237,8
1.009,0	1.187,0	1.259,0	21,1
1.906,0	1.957,0	2.157,0	36,6
469,0	512,0	561,0	20,1
375,0	403,0	422,0	426,8
3.398,0	4.084,0	4.540,0	54,7
196,0	200,0	204,0	3,4
408,0	410,0	412,0	6,1
118,0	124,0	130,0	3,8
1.951,0	2.018,0	2.155,0	45,3
166,0	125,0	94,0	2,9
351,0	372,0	385,0	6,2
757,0	1.160,0	905,0	14,7
691,0	824,0	690,0	108,4
0,6	0,5	0,4	0,6
9,8	10,3	14,0	17,3

## SECTION 2



PRINCIPAL CULTIVATIONS PRODUCTIONS

b) Seasonal cultivations.

DESCRIPTION	PRODUCT	UNIT	1.966
<u>Cereals</u>	Rice	Thousand Tns.	5.801
	Oat	" "	23
	Common rye	" "	16
	Barley	" "	35
	Milne	" "	11.371
	Wheat	" "	615
<u>Leguminous</u>	Common Bean	" "	74
	Kidney Beans	" "	2.148
	Soja	" "	595
<u>Tubers</u>	Sweet potato	" "	1.912
	English sweet potato	" "	1.329
	Manihot	" "	26.710
	Cotton	" "	1.865
<u>Industrial plants.</u>	Amendoim	" "	895
	Sugar cane	" "	28.787
	Leaf tobacco	" "	228
	Jute	" "	44
	Linen	" "	36
	Spurge	" "	329
	Pine	Millions pieces.	197
	Alfalfa	Thousand Tns.	198
<u>Others.</u>	Garlic	Millions pieces.	33
	Onion	" "	277
	Watermelon	" "	83
	Melon	" "	5
	Tomato	Thousand Tns.	679

Source: Statistics 1969 year-book

## SECTION 1

PRINCIPAL CULTIVATIONS PRODUCTIONS

a) Seasonal cultivations.

	1.966	1.967	1.968	1.968 10 <sup>6</sup> H.C.S
	5.801	6.792	6.652	1.666,4
	33	21	25	6,2
	16	17	18	5,7
	35	31	29	7,8
	11.371	12.824	12.814	1.352,3
	615	629	856	312,1
	74	93	84	23,6
	2.148	2.547	2.420	725,8
	595	716	654	136,3
	1.912	2.226	2.120	117,6
	1.329	1.466	1.606	230,3
	26.710	27.268	29.203	938,7
	1.865	1.692	1.999	915,3
	895	751	754	206,8
	78.787	77.086	76.610	1.041,6
	228	243	250	207,6
	44	40	51	20,6
	36	28	28	10,0
	329	355	370	102,7
	197	225	225	40,1
	190	176	169	27,9
	33	33	37	40,9
	277	250	272	83,1
	83	95	104	34,7
	5	6	5	2,5
	679	745	775	187,1

## SECTION 2

Table: 2.2.10.

CATTLE AND AVICULTURE CENSUS

(in millions of heads)

FLOCKS	1966	1967	1968	1968 10 <sup>6</sup> N. Cr. A
Bovine	90.0	90.0	92.3	15,288.0
Horses	9.2	9.2	9.2	926.5
Assinine	2.8	3.0	3.0	113.6
Mules	4.7	4.8	4.8	743.9
Porcine	62.0	63.4	65.6	3,745.6
Ovine	22.2	23.0	24.6	428.9
Caprine	13.9	14.3	14.7	225.9
Drakes, etc.	7.4	7.8	8.3	24.7

FOWLS	1966	1967	1968	1968 10 <sup>6</sup> N. Cr. A
Turkeys	4.1	4.3	4.5	42.8
Hens	125.6	127.8	130.1	372.8
Cocks and chickens	130.0	135.2	141.6	257.4
Drakes and geese	7.9	8.1	8.3	27.7

Source: Statistics year-book 1969

Table 2.2.11.

**CATTLE, AGRICULTURE AND AGRICULTURE PRODUCTIONS**

PRODUCTION	UNIT	1966	1967	1968	1968 10 <sup>6</sup> MCR \$
Milk	Millions litres	6.69	6.70	7.0	1,624.8
Wool	Thousands tonnes	27.9	28.3	30.7	71.0
Ewe eggs	Millions dozens	706.4	729.5	771.8	714.7
Bees honey	Thousands tonnes	7.9	7.1	7.0	12.0
Bees wax	Thousands tonnes	1.4	1.3	1.3	3.1
Silk cocoons	Thousands tonnes	1.4	1.5	1.6	6.0

SOURCE: Statistics Year-Book 1969

Table: 2.2.12.

## EMPLOYMENT IN PROCESS INDUSTRIES - SECTOR DISTRIBUTION YEAR: 1965

(in thousands people)

SECTORS	BRAZIL	STATE OF SÃO PAULO	STATE OF GUANABARA	STATE OF RIO	TOTAL SMO P. C. REC	% FROM NATION TOTAL
<b>T O T A L</b>	1,895	960,8	196,0	117,0	1,273,8,	67,2
Non metallic miner.	136	63,7	13,0	7,7	84,4	62,0
Metallurgy	243	120,1	14,8	28,2	163,1	67,1
Mechanics	73	59,4	8,1	--	67,5	92,4
Electr. Commun. mater.	83	66,8	10,3	--	77,1	92,9
Transport material	133	104,5	7,6	14,5	126,6	95,1
Wood	78	12,4	1,8	--	14,2	18,2
Furniture	48	26,4	9,0	--	35,4	73,7
Paper	48	27,7	3,9	3,4	35,0	72,9
Rubber	25	19,2	4,4	0,2	23,8	95,2
Leather	22	7,1	3,1	--	10,2	46,3
Chemistry	98	54,4	7,9	12,2	74,5	76,0
Pharmaceutics	36	20,0	13,8	2,1	35,9	99,7
Perfumery prods.	14	5,9	4,5	0,7	11,1	79,2
Plastic products	24	18,6	4,4	--	23,0	95,8
Textile	313	154,2	21,5	25,5	201,1	64,2
Clothing and shoes	93	43,1	16,4	--	59,5	63,9
Food products	262	84,6	16,9	20,1	121,6	46,4
Beverages	49	19,6	7,3	2,5	29,4	60,0
Tobacco	16	3,5	2,3	--	5,8	36,3
Editorial and graph.	63	24,2	20,5	--	44,7	70,9
Miscellaneous	38	25,4	4,5	--	29,9	78,7

SOURCE: Statistics Year-Book 1969

Table: 2.2.12. (Continuación)

## EMPLOYMENT IN PROCESS INDUSTRIES - SECTOR DISTRIBUTION YEAR: 1968

SECTORS	BRASIL	Sao Paulo	Guanabara	Total São Paulo and Guanabara	From Nation Total
<b>TOTAL</b>	<b>2.218</b>	<b>1.129,2</b>	<b>505,8</b>	<b>1.335,0</b>	<b>60,2</b>
Non metallic min.	170	79,1	14,2	93,3	54,8
Metallurgy	255	126,4	16,6	143,0	56,0
Mechanics	96	72,5	8,2	80,7	84,0
Elect Commun mat.	118	89,2	13,4	102,6	86,9
Transport mater.	172	130,1	10,4	140,5	81,6
Wood	97	12,9	3,2	16,1	16,6
Furniture	58	26,2	8,5	34,7	59,8
Paper	51	29,3	3,9	33,2	65,1
Rubber	26	21,3	1,8	23,1	82,5
Leather	26	7,4	2,7	10,1	38,8
Chemistry	107	63,3	6,1	69,4	64,8
Pharmaceutics	35	20,4	11,1	31,5	90,0
Perfumery prods.	20	10,1	3,7	13,8	69,0
Plastic prods.	30	20,5	5,1	25,6	85,3
Textile	354	176,1	20,5	196,6	55,5
Clothing and shoes	120	57,9	20,0	77,9	64,9
Food products	278	93,3	18,0	111,3	40,0
Beverages	52	17,2	9,9	27,1	52,1
Tobacco	16	3,3	2,5	5,8	36,2
Editor. and Graph.	76	31,0	21,2	52,2	68,6
Miscellaneous	59	41,6	4,8	46,4	78,6

- PROCESSING INDUSTRY -PRODUCTION VALUE, EMPLOYED PERSONNEL AND SALARIES

Year: 1968

SECTOR	PRODUCTION VALUE 1,000 NCr. \$	PAID SALARY 1,000 NCr. \$	EMPLOYED PERSONNEL	PRODUCT VALUE/ WORKER	SALARY /PRODUCT VALUE
<b>TOTAL</b>	<b>28,858,321</b>	<b>6,605,171</b>	<b>2,218,272</b>	<b>26.51</b>	<b>0.112</b>
Non-metal. minerals	2,531,963	378,352	170,108	14.88	0,147
Metallurgy	6,084,577	840,783	255,183	23,84	0,381
Mechanics	2,077,818	363,970	95,780	21,69	0,175
Elec. & comm. mater.	3,310,085	447,548	118,217	28,00	0,135
Transport material	5,481,528	818,862	171,525	31,96	0,149
Wood	1,300,995	163,321	97,481	13,35	0,125
Furniture	810,357	129,908	58,244	13,91	0,160
Paper	1,511,089	162,167	51,300	29,45	0,107
Rubber	1,133,261	103,850	28,352	39,97	0,091
Skins and leather	475,783	60,086	25,973	18,32	0,126
Chemistry	6,517,788	497,801	106,982	60,92	0,076
Pharmaceutics	1,454,313	178,620	35,246	41,26	0,123
Perfumes	983,625	77,923	20,089	48,96	0,079
Elastics	864,728	90,887	29,620	29,19	0,105
Textile	6,132,344	765,879	353,654	17,34	0,125
Clothing and shoes	1,841,562	239,944	120,013	15,34	0,130
Food products	12,429,024	645,874	277,782	44,74	0,052
Beverages	1,158,943	161,858	52,324	22,15	0,139
Tobacco	662,206	54,468	16,447	40,26	0,082
Print. and graphics	1,166,599	275,785	75,952	15,36	0,236
Miscellaneous	929,733	153,387	58,006	16,03	0,165

Source: Statistics 1969 year-book

Table: 2.2.14.

RESUME OF THE PRINCIPAL INDUSTRIAL PRODUCTIONS

<u>SECTOR</u>	<u>PRODUCT</u>	<u>UNIT</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
<u>Metallic minerals</u>	Lead	Thousand tonnes	9.9	4.1	n.d.
	Tin	"	1.2	0.5	n.d.
	Gold	Tonnes	5.2	5.4	n.d.
	Silver	"	6.9	14.9	n.d.
<u>Non-metallic minerals</u>	Concrete	Mill. Tn.	6.0	6.4	7.3
	Flat glass	" m <sup>2</sup>	6.2	8.2	10.8
<u>Metallurgy</u>	Ferrogusa	Thou. Tn.	2.9	3.1	3.4
	Steel bars	" "	3.8	3.8	4.4
	Flat sheets	" "	1.4	1.3	1.8
	Non-flat sheets	" "	1.3	1.4	1.7
	Allumin. (Bars)	" "	26.8	29.7	n.d.
	Allumin. (sheets)	" "	32.4	34.5	n.d.
<u>Mechanics</u>	Diesel motors	Thousands	17.2	19.9	39.9
	Centrif. and rotative pumps	"	107.4	107.2	153.0
	Sewing-machines	"	203.8	395.8	461.6
<u>Electrical and communications material</u>	Frac. elect. motors	"	153.3	629.5	1,066.5
	Elec. motors 1-10 HP	"	225.7	271.7	342.8



RESUME OF THE PRINCIPAL INDUSTRIAL PRODUCTIONS

<u>SECTOR</u>	<u>PRODUCT</u>	<u>UNIT</u>	1966	1967	1968
<u>Electrical and communications material (continuation)</u>	Elec. motors over 10 HP	Thousands	10.8	20.6	20.2
	Domes. refrigerators	"	311.8	335.1	502.5
	Radios and transistors	"	816.9	584.0	790.5
	Television sets	"	377.8	417.0	625.3
<u>Transport material</u>	Motorcars	"	120.1	132.0	161.4
	Medium lorry	"	30.5	28.8	42.8
	Heavy lorry	"	4.5	2.9	4.3
	Little trucks	"	54.4	53.0	62.4
	Jeeps	"	14.9	8.5	8.1
	Agrimotors	"	9.1	6.2	9.6
	Ships	" TPN	67.4	94.0	194.7
<u>Chemistry</u>	Poliethylene	" Tn.	19.9	24.5	30.1
	Vinylic resins	" "	19.5	26.1	35.9
	Nylon and rayon threads	" "	31.4	50.3	55.8
	Phosphatic fertilizer	" "	206.7	311.6	316.5
	Mixed fertiliz.	" "	448.5	694.9	951.5
<u>Textile</u>	Cotton tissues	Mill.m.	183.8	1,097.3	1,251.6

RESULTS OF THE PRINCIPAL INDUSTRIAL PRODUCTIONS

<u>SECTOR</u>	<u>PRODUCT</u>	<u>UNIT</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
<u>Textile</u> (continuation)	Wool tissues	Mill.m.	12.7	8.9	8.7
	Artificial thread tissue	" "	95.3	136.1	167.4

Source: Statistics year-book 1969

FOREIGN COMMERCE

IMPORT

(thousands tonnes)

PRODUCTS	1966	1967	1968	1965 10 <sup>6</sup> US \$
Machinery and vehicles	146.5	152.6	193.7	639.4
Chemistry and Pharmaceutical Products	1,065.4	1,320.8	2,032.7	323.9
Petroleum	11,322.5	10,559.3	12,534.7	199.5
Wheat	2,394.4	2,446.0	2,621.1	182.6
Common Metals for Metallurgy	406.8	390.0	447.1	141.6
Other products	5,056.7	5,172.1	5,817.4	584.8
TOTAL .....	19,392.3	19,841.8	23,647.7	2,131.8

Table: 2.2.16.

FOREIGN COMMERCE  
EXPORT

(thousands tonnes)

PRODUCTS	1.966	1.967	1.968	1.968 10 <sup>6</sup> USA \$
Coffee and preparations	1.014,0	1.016,0	1.119,0	797,2
Raw cotton	235,8	189,4	247,5	130,8
Sugar and preparations	1.004,5	1.173,4	1.239,0	106,3
Hematite	12.910,4	14.279,2	15.049,7	104,4
Cocoa	135,1	136,2	95,5	72,23
Pine (araucaria)	722,4	623,8	791,7	71,9
Maile	627,0	430,4	1.238,0	57,0
Vegetal Oils	113,0	97,7	141,9	42,5
Forages	500,7	394,7	538,2	38,5
Rice	289,2	31,8	158,1	21,2
Other products	2.551,3	2.756,1	2.868,6	439,3
TOTAL .....	20.103,4	21.126,7	23.487,2	1.881,3

SOURCE: Statistics Year-Book 1969

## - PAYMENT BALANCE -

C O N C E P T S	1966	1967	1968
1.- <u>MERCHANDISE AND SERVICES</u>	<u>(112)</u>	<u>(354)</u>	<u>(472)</u>
a- Export FOB	1,741	1,654	1,831
b- Import FOB	(1,303)	(1,441)	(1,855)
c- Commercial balance	438	213	26
d- Services	(550)	(567)	(499)
2.- <u>DURATIVES</u>	79	77	4
3.- <u>TOTAL OF SIMPLE TRANSAC- TIONS</u>	<u>(33)</u>	<u>(277)</u>	<u>(469)</u>
4.- <u>OUTGOINGS OF AUTONOMIC CAPITALS</u>	<u>(492)</u>	<u>(582)</u>	<u>(487)</u>
5.- <u>INCOMINGS AUTONOMIC CAPITALS</u>	697	645	981
6.- <u>BALANCE</u>	<u>172</u>	<u>(214)</u>	<u>25</u>
7.- <u>ERRORS AND OMISSIONS</u>	(19)	(31)	7
8.- <u>DEFICIT OR SURPLUS (NEAT)</u>	<u>153</u>	<u>(245)</u>	<u>32</u>

Source: Statistics year- book 1969

STRUCTURE OF PUBLIC EXPENSES IN BRAZILACCORDING TO GOVERNMENT SPHERES IN PERCENTAGES OF TOTAL  
EXPENSES

<u>Year</u>	<u>Federation</u>	<u>States</u>	<u>Townships</u>	<u>Total</u>
1960	54.6	39.2	6.2	100.0
1961	58.2	35.8	6.0	100.0
1962	58.6	35.4	6.0	100.0
1963	56.6	35.3	8.1	100.0
1964	58.4	34.1	7.5	100.0
1965	56.8	35.2	8.0	100.0
1966	57.5	33.9	8.6	100.0
1967	56.8	33.9	9.3	100.0
1968	56.7	32.6	10.7	100.0

Source: Getulio Vargas Foundation

GOVERNMENT EXPENSES IN % FROM PAB

<u>Years</u>	<u>Consumption</u>	<u>Investment</u>	<u>Total</u>
1959	12.6	5.3	17.9
1960	13.4	4.5	17.9
1961	13.3	3.7	17.0
1962	12.8	4.0	16.8
1963	13.5	2.9	16.4
1964	12.7	2.8	15.5
1965	11.5	4.7	16.2
1966	11.7	3.1	14.8
1967	11.4	4.3	15.7

Source: Getulio Vargas Foundation

TRIBUTARY PRESSION

<u>Years</u>	<u>Brute tribu- tary preston</u>	<u>Relationship between transf. subs. and PNB</u>	<u>Net tribu- tary preston</u>
1959	21.0	5.6	15.4
1960	20.3	5.3	15.0
1961	18.9	6.2	12.7
1962	18.0	6.7	11.3
1963	18.1	6.2	11.9
1964	19.5	6.4	13.1
1965	22.0	7.8	14.2
1966	24.3	8.0	16.3
1967	21.7	8.5	13.2

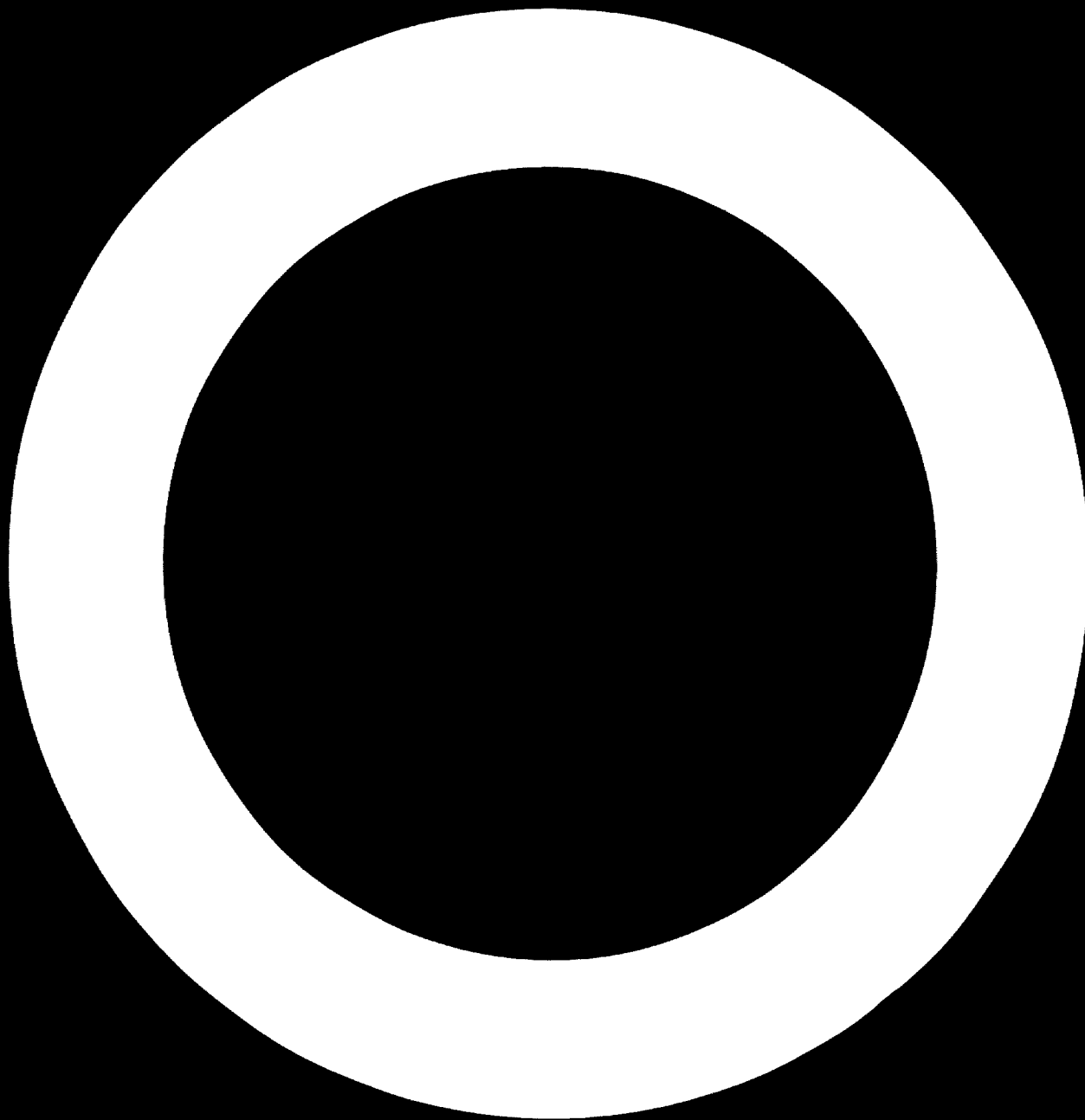
Source: Getulio Vargas Foundation



RELATIONSHIP BETWEEN ATTORNEY INCOMES AND PNB  
ACCORDING TO BIRD REPORT

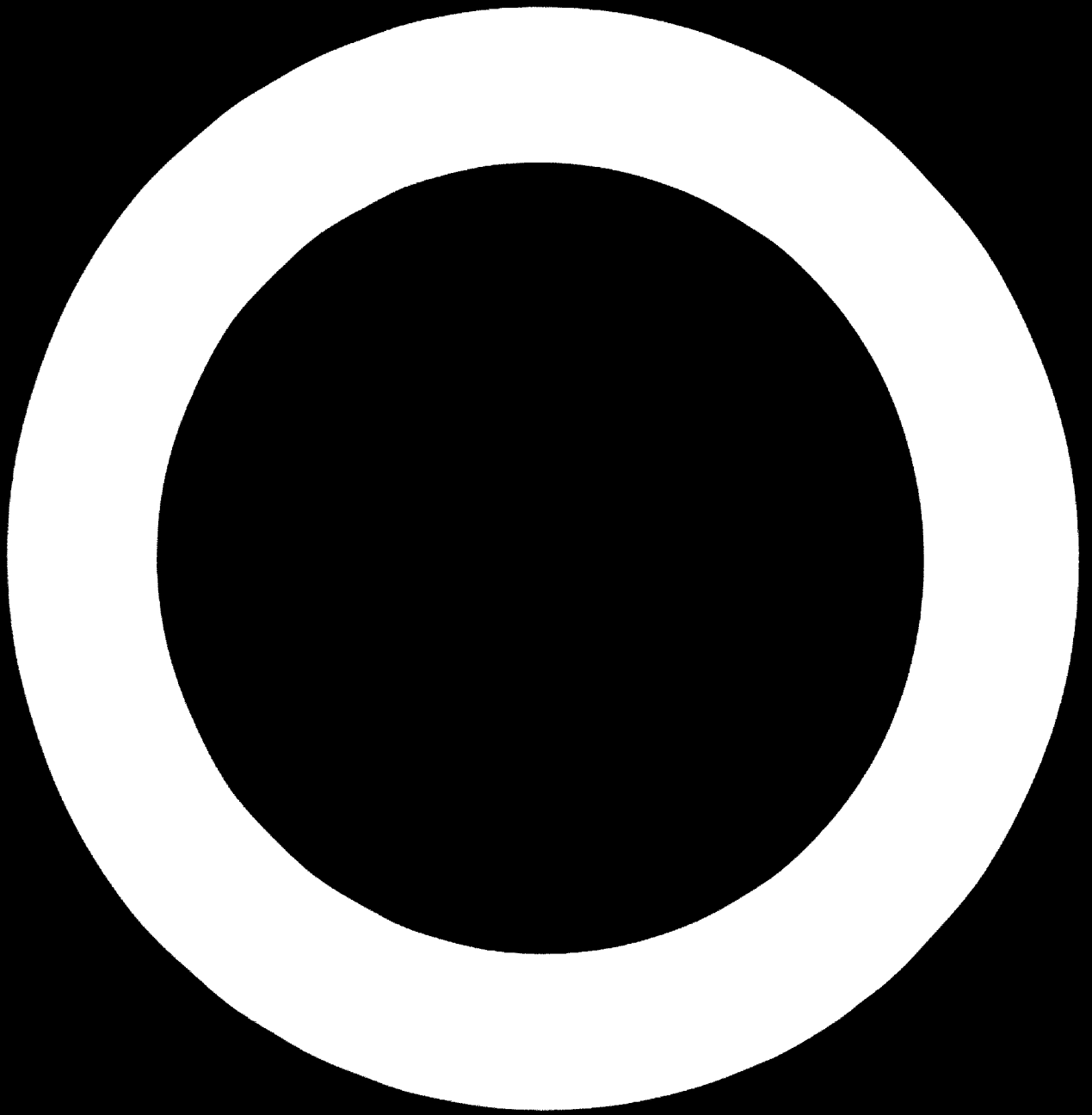
<u>Years</u>	<u>PNB in thousand millions of Cr.</u>	<u>Attorney incomes in thousand millions of Cr.</u>	<u>Attorney incomes in % from PNB.</u>
1961	3,498.6	809.6	23.1
1962	5,498.0	1,266.1	23.0
1963	9,591.2	2,272.3	23.7
1964	18,867.3	4,895.9	25.9
1965	31,033.7	8,374.5	27.0
1966	42,875.5	13,134.7	30.6

Source: BIRD. "Economic Growth of Brazil: Problems and prospects".



**A-3 STATISTICS USED FOR PRESELECTION OF**  
**PRODUCTIVE LINES**

**(Source: I.B.C.E.)**



## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LI

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				t.u. A.C. Inhal
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	
REFINED HOG FAT	1:965	Tn.	82.529	1.776	---	84.305	1,036
	1:967	Tn.	83.493	20	---	82.513	0,99
BISCUITS	1:965	Tn.	---	---	---	---	---
	1:967	Tn.	124.317	---	---	124.317	1,43
GROUNDED COFFEE	1.965	Tn.	916.851	---	682	916.169	11,26
	1.967	Tn.	184.268	---	---	184.268	2,12
FROZEN BEEF	1.965	Tn.	266.614	---	29.782	236.832	2,91
	1.967	Tn.	376.101.	---	6.398	369.703	4,27
COMPOT SWEET	1.965	Tn.	52.228	---	---	52.228	0,70
	1.967	Tn.	61.257	---	---	61.257	0,70
EXTRACT OF TOMATO	1.965	Tn.	17.195	---	---	17.195	0,20
	1.967	Tn.	42.578	---	---	42.578	0,49
LACTEAL FLOURS	1.965	Tn.	5.454	---	---	5.454	0,06
	1.967	Tn.	6.376	86.230	---	92.606	1,06
MANIOC FLOUR	1.965	Tn.	79.486	---	23.514	55.972	0,67
	1.967	Tn.	51.254	---	81	51.173	0,60
CORN FLOUR	1.965	Tn.	71.886	9.629	---	81.515	0,98
	1.967	Tn.	71.372	19.799	---	91.171	1,05
WHEAT FLOUR	1.965	Tn.	1.501.437	9.402	---	1.510.839	18,58
	1.967	Tn.	1.864.607	24.561	---	1.889.168	22
COMPOT FRUITS	1.965	Tn.	40.754	---	---	40.754	0,49
	1.967	Tn.	18.822	---	---	18.822	0,21

## SECTION 1

## ION OF PRODUCTIVE LINES IN FOOD PRODUCTS SECTOR

I L				B A H I A				1.967
APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./Inhab.	PROD. VALUE 1,000 N Cr. (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr. (7)	% (7/5)	BRAZIL UNIT PRICE (5/1)
84.305	1,036	73.467	2,11	---	---	---	---	1.235,5
82.513	0,95	103.158	0,024	---	---	---	---	
---	---	---	---	---	---	---	---	1.287,71
124.317	1,43	160.084	---	7.982	6,42	7.983	4,99	
916.169	11,26	418.143	---	8.829	0,96	3.439	0,82	342,31
184.268	2,12	63.077	---	10.432	5,66	3.610	5,72	
236.832	2,91	198.272	---	3.587	1,35	4.109	2,07	1.243,2
369.709	4,27	467.552	---	2.366	0,63	3.100	0,66	
52.228	0,70	24.790	---	443	0,85	153	0,62	691,8
61.257	0,70	42.375	---	599	0,98	387	0,91	
17.195	0,20	13.597	---	---	---	---	---	1.297,0
42.578	0,49	55.251	---	---	---	---	---	
5.454	0,06	9.237	---	---	---	---	---	3.270,5
92.606	1,06	20.853	23,11	---	---	---	---	
55.972	0,67	8.567	---	---	---	---	---	202,0
51.173	0,60	10.355	---	205	0,40	25	0,24	
81.515	0,98	12.606	11,77	1.501	2,09	359	2,85	241,80
91.171	1,05	17.258	21,72	2.762	3,87	719	4,17	
1.510.839	18,58	378.389	0,622	---	---	---	---	402,61
1.889.168	22	750.719	1,30	---	---	---	---	
40.754	0,49	16.062	---	---	---	---	---	1.197,20
18.822	0,21	22.535	---	---	---	---	---	

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (AC)	t.u. A.C./ Inhab
CRISTALLIZED FRUITS	1.965	Tn.	2.701	5.837	---	8.538	0,10
	1.967	Tn.	2.845	7.161	---	10.006	0,11
ICE	1.965	Tn.	230.891	---	---	230.891	2,33
	1.967	Tn.	289.246	---	---	289.246	3,34
COCONUT FAT	1.965	Tn.	27.563	---	---	27.563	0,33
	1.967	Tn.	21.273	---	---	21.273	0,24
MIXED FATS	1.965	Tn.	9.949	---	---	9.949	0,11
	1.967	Tn.	4.589	---	---	4.589	0,05
TINNED VEGETABLES	1.965	Tn.	19.604	---	---	19.604	0,23
	1.967	Tn.	19.298	---	---	19.298	0,22
CONDENSED MILK	1.965	Tn.	9.206	---	---	9.206	0,11
	1.967	Tn.	16.498	---	---	16.498	0,19
POWER MILK	1.965	Tn.	61.554	21.530	---	83.084	0,99
	1.967	Tn.	82.262	25.640	---	107.902	1,24
BUTTER	1.965	Tn.	27.237	89	---	27.326	0,32
	1.967	Tn.	35.735	20	20.960	14.795	0,17
MARGARINE	1.965	Tn.	27.676	---	---	27.676	0,33
	1.967	Tn.	35.736	---	---	35.736	0,41
REFINED COTTON OIL	1.965	Tn.	62.737	5.033	---	67.770	0,81
	1.967	Tn.	66.801	---	---	66.801	0,77
REFINED PEANUT OIL	1.965	Tn.	69.847	---	---	69.847	0,84
	1.967	Tn.	78.729	---	---	78.729	0,90

## SECTION 1

## SELECTION OF PRODUCTIVE LINES IN FOOD PRODUCTS SECTOR

Z I L									1967 BRAZIL PRICE UNIT (5/1)
PTS	APPARENT CONSUMPTION (4) (AC)	t.u. A.C./ Inhab	PROD. VALUE 1,000 N Cr. (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr. (7)	% (7/5)	
	8.538	0,10	3.104	68,36	---	---	---	---	1.811,97
	10.006	0,11	5.155	71,57	---	---	---	---	
	230.891	2,33	2.933	---	---	---	---	---	22,70
	289.246	3,34	6.505	---	---	---	---	---	
	27.563	0,33	27.542	---	---	---	---	---	990,9
	21.273	0,24	21.080	---	---	---	---	---	
	9.949	0,11	8.734	---	---	---	---	---	1,20
	4.589	0,05	5.774	---	1.229	26,78	1.150	19,38	
	19.604	0,23	10.672	---	---	---	---	---	938,60
	19.298	0,22	18.115	---	---	---	---	---	
	9.206	0,11	14.197	---	---	---	---	---	2.370,10
	16.493	0,19	38.673	---	---	---	---	---	
	83.084	0,99	106.465	25,91	---	---	---	---	1.338,60
	107.902	1,24	277.931	29,76	---	---	---	---	
	27.326	0,32	49.508	---	1.287	4,73	1.916	3,87	2.696,4
960	14.795	0,17	96.357	---	1.516	4,24	2.603	2,70	
	27.676	0,33	24.489	---	---	---	---	---	1.868,34
	35.736	0,41	66.785	---	---	---	---	---	
	67.770	0,81	50.093	7,42	---	---	---	---	1.251,56
	66.801	0,77	83.606	---	---	---	---	---	
	69.847	0,84	65.970	---	---	---	---	---	1.296,57
	78.729	0,90	102.078	---	---	---	---	---	

## SECTION 2



## BASIC DATA FOR PRESELECTION OF PRODUCTIVE L

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				t. A. Inh.
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (AC)	
REFINED CORN OIL	1.965	Tn.	12.704	---	---	12.704	0,
	1.967	Tn.	9.328	---	---	9.328	0,
REFINED SOJA OIL	1.965	Tn.	28.665	6.203	---	34.868	0,
	1.967	Tn.	47.720	14.700	---	62.420	0,
TINNED FISH	1.965	Tn.	18.710	117	---	18.827	0,
	1.967	Tn.	25.649	553	---	26.202	0,
CHEESE	1.965	Tn.	33.249	---	---	33.249	0,
	1.967	Tn.	42.539	164	---	42.703	0,
MIXED FOOD FOR FOWLS	1.965	Tn.	475.760	---	---	475.760	5,
	1.967	Tn.	671.618	---	17.574	654.044	7,
MIXED FOOD FOR CATTLE	1.965	Tn.	193.523	---	---	193.523	2,
	1.967	Tn.	191.823	---	---	191.823	2,
FINE SALT	1.965	Tn.	460.503	---	---	460.503	5,
	1.967	Tn.	444.578	---	---	444.578	5,

## SECTION 1

SECTION OF PRODUCTIVE LINES IN FOOD PRODUCTS SECTOR

I L					B A H I A					1967 BRAZIL PRICE UNIT (5/1)
PTS	APPARENT CONSUMPTION (4) (AC)		t.u. A.C. Inhab	PROD. VALUE 1,000 N Cr. (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr. (7)	% (7/5)	
	12.704		0,15	14.236	---	---	---	---	---	2.016,72
	9.328		0,10	18.812	---	---	---	---	---	
	34.868		0,41	26.268	17,79	---	---	---	---	1.307,71
	62.420		0,72	62.404	21,55	---	---	---	---	
	18.827		0,22	17.597	0,621	41	0,22	12	0,07	1.238,63
	26.202		0,30	32.975	2,11	---	---	---	---	
	33.249		0,40	48.949	---	77	0,23	137	0,28	2.309,43
	42.703		0,49	98.241	0,384	75	0,13	165	0,17	
	475.760		5,85	52.512	---	1.914	0,40	392	0,73	244,30
74	654.044		7,55	164.072	---	3.931	0,22	1.288	0,78	
	193.523		2,32	15.966	---	---	---	---	---	153,83
	191.823		2,21	29.511	---	---	---	---	---	
	460.503		5,66	47.829	---	579	0,13	32	0,17	1.212,7
	444.578		5,13	54.062	---	1.068	0,02	264	0,42	

SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINE

PRODUCTIVE LINE	YEAR	UNIT	B R A Z I L			
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (ACI)
BOTTLED BEER	1.965	L.	673.889.705	---	---	673.889.705
	1.967	L.	722.677.681	---	---	722.677.681
BARREL BEER	1.965	L.	83.663.365	---	---	83.663.365
	1.967	L.	61.866.737	---	---	61.866.737
REFRESHMENTS	1.965	L.	692.535.050	---	---	692.535.050
	1.967	L.	688.845.740	---	---	688.845.740
FRUIT JUICE EXCLUSIVELY FROM GRAPES	1.965	L.	12.713.164	---	---	12.713.164
	1.967	L.	23.130.630	---	---	23.130.630
GRAPES JUICE	1.965	L.	13.180.900	---	---	13.180.900
	1.967	L.	7.645.276 b	---	---	7.645.276
GRAPE WINE	1.965	L.	152.647.284	381.482	---	153.028.766
	1.967	L.	232.884.376	1.742.558	---	234.676.934
SUGARCANE RUM	1.965	L.	196.496.476	---	372.344	196.124.132
	1.967	L.	206.998.674	---	906.746	206.091.928

## SECTION 1



## BASIC DATA FOR PRESELECTION OF

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L			
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)
CIGARETTES	1.965	1000 u.	48.607.314	---	53.684	48.753.630
	1.967	1000 u.	64.633.515	---	273.434	64.360.081
REFINED AND ELABORATED TABACCOES	1.965	Tn.	157.807	---	---	157.807
	1.967	Tn.	77.420	---	---	77.420
SMALL CIGARS	1.965	1000 u.	137.650	---	11.231	126.419
	1.967	1000 u.	93.964	---	10.633	83.331
CIGARS	1.965	1000 u.	25.586	---	---	25.586
	1.967	1000 u.	31.931	---	---	31.931

## SECTION 1



## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	t. of A.C. Inha
CROSS TIMBERS	1.965	m <sup>3</sup>	85.337	---	---	85.337	0,00
	1.967	m <sup>3</sup>	51.061	---	---	51.061	0,00
PRESSED VENEERS FROM FIBRE AND WOOD EUCATEX ETC.	1.965	m <sup>2</sup>	14.410.319	---	---	14.410.319	0,18
	1.967	m <sup>2</sup>	21.513.753	---	---	21.513.753	0,25
COMPENSATED WOOD	1.965	m <sup>2</sup>	12.410.471	---	---	12.410.471	0,15
	1.967	m <sup>2</sup>	29.086.205	---	---	29.086.205	0,33
WOOD IN FOILS	1.965	m <sup>2</sup>	167.045	---	---	167.045	0,00
	1.967	m <sup>2</sup>	220.626	---	---	220.626	0,00
LAMINATED TIMBER	1.965	m <sup>2</sup>	5.053.800	---	---	5.053.800	0,06
	1.967	m <sup>2</sup>	13.956.401	---	---	13.956.401	0,162
SAWED OR DEROUGHED TIMBER	1.965	m <sup>3</sup>	5.971.997	---	---	5.971.997	0,071
	1.967	m <sup>3</sup>	5.745.260	---	---	5.745.260	0,053
PARQUET FLOOR LOCKS	1.965	m <sup>2</sup>	3.234.668	---	3.547	3.231.121	0,040
	1.967	m <sup>2</sup>	5.811.156	---	2.990	5.808.166	0,00

## SECTION 1

OF PRODUCTIVE LINES IN WOOD SECTOR

I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)
APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C. Inhab.	PROD. VALUE 1,000 N Cr. % (5) (2/4)		PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr. % (7) (7/3)		
35.337	0,001	2.205	---	209	0,24	9	0,41	52,4
51.661	0,001	2.673	---	500	0,93	40	1,49	
14.410.319	0,18	10.688	---	---	---	---	---	1,53
21.513.753	0,25	32.950	---	---	---	---	---	
12.410.471	0,15	30.049	---	426.752	3,44	167	0,56	2,32
29.086.205	0,33	67.604	---	380.640	3,31	837	1,24	
167.045	0,002	1.087	---	---	---	---	---	5,99
220.626	0,002	1.323	---	5.500	2,49	125	2,45	
5.053.800	0,06	14.527	---	---	---	---	---	2,45
13.956.401	0,162	34.245	---	62.210	0,59	42	0,123	
5.971.997	0,071	177.785	---	31.641	0,53	2.922	1,64	<b>55,27</b>
5.745.260	0,063	317.545	---	39.375	2,09	4.954	1,56	
3.231.121	0,040	7.980	---	78.314	2,42	163	2,05	3,74
5.808.166	0,06	21.589	---	240.794	4,14	1.035	4,79	

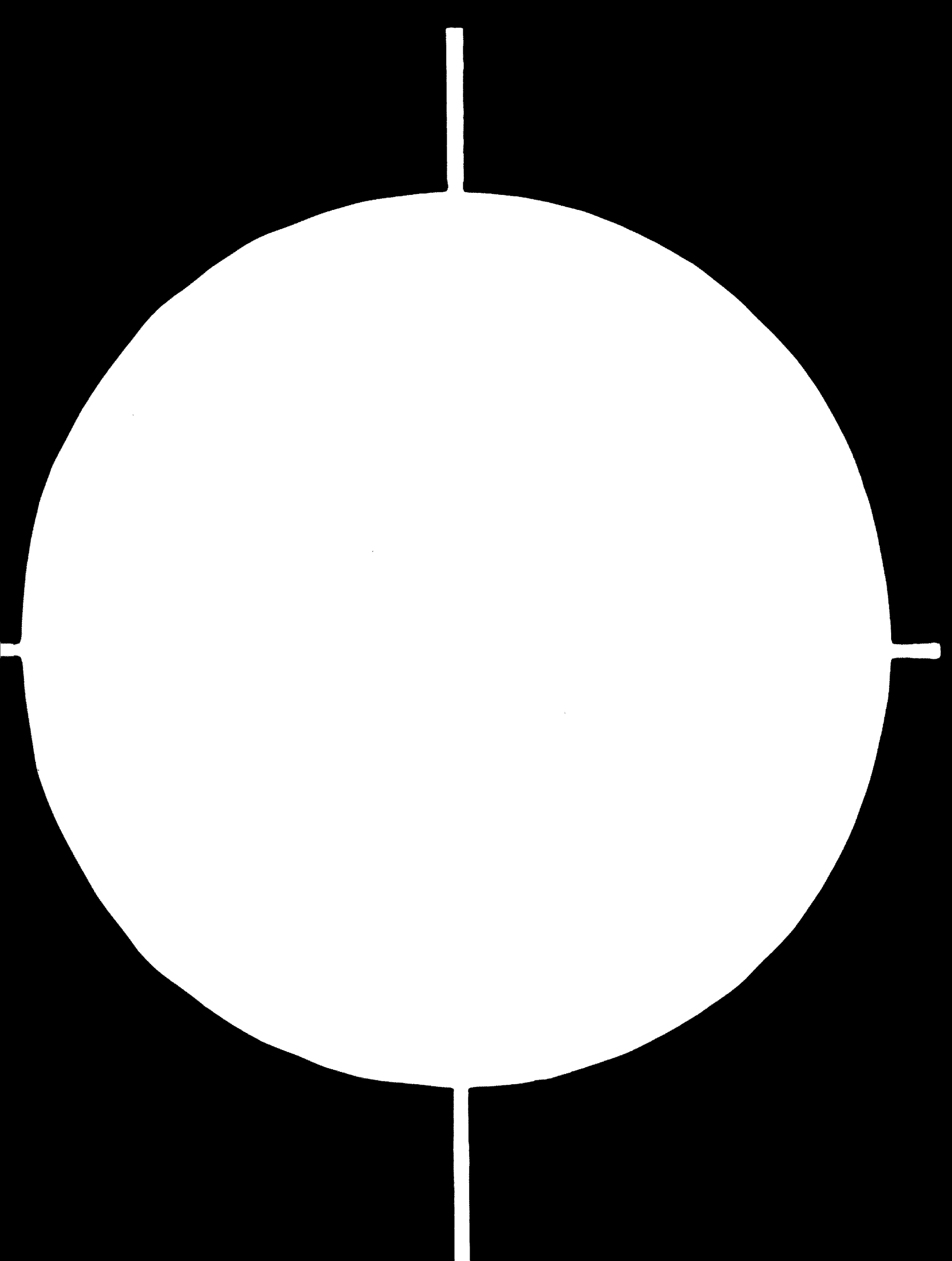
SECTION 2



**G - 560**

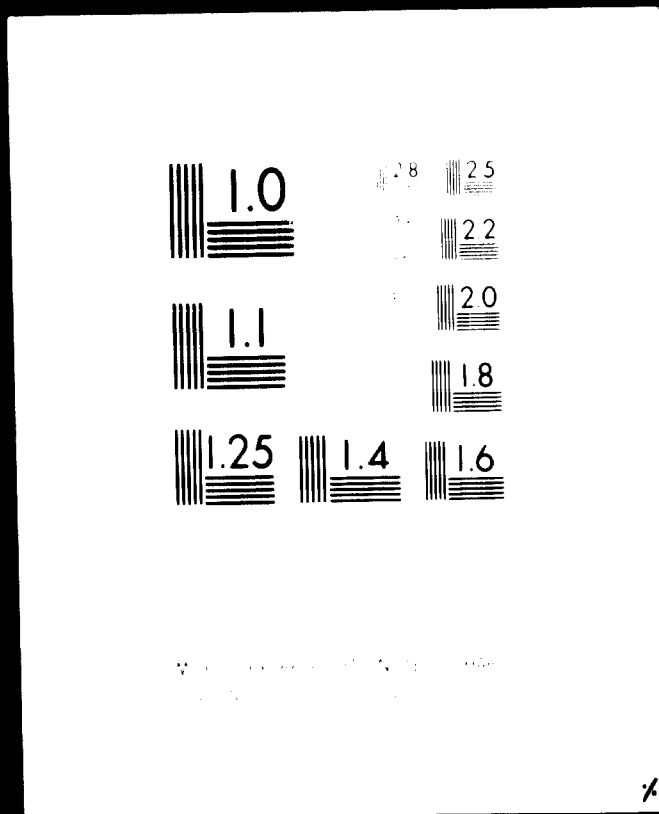


**81.08.24**



# 6 OF 7

## 02510



24x  
D

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				t. A. I.
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (A.C.)	
WOOD FURNISHER	1.965	N.Cr.	---	---	188.872	---	
	1.967	N.Cr.	---	1.011.663	570.135	---	
METAL FURNISHER	1.965	N.Cr.	---	---	27.755	---	
	1.967	N.Cr.	---	---	48.987	40.987.013	
METAL TABLES	1.965	U M A	74.302	---	---	74.302	0.
	1.967	U M A	145.198	---	---	145.198	0.
METAL FILING CABINETS	1.965	U M	96.465	---	---	96.465	0.
	1.967	U M	100.358	---	---	100.358	0.
METAL CABINETS	1.965	U M	148.342	---	---	148.342	0.
	1.967	U M	214.324	---	---	214.324	0.
VENETIAN BLINDS OF ANY TYPE OR MATERIAL	1.965	U M A	638.140	---	---	638.140	0.
	1.967	U M A	567.294	---	---	567.294	0.
HORSE HAIR CORDUROY AND STRAW MATTRESSES	1.965	U M	217.055	---	---	217.055	0.
	1.967	U M	233.727	---	---	233.727	0.
SPRING- MATTRESSES	1.965	U M	522.731	---	---	522.731	0.
	1.967	U M	538.655	---	---	538.655	0.

SECTION 1

## PRODUCTIVE LINES IN FURNISHING SECTOR

I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)
APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab	PROD.VALUE 1,000 N Cr. (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr. (7)	% (7/5)	
---	---	---	---	---	---	---	---	
---	---	131.768.000	---	---	---	2.133.000	1,6	
---	---	---	---	---	---	---	---	
40.987.013	---	41.036.000	---	---	---	764.000	1,85	
74.302	0,001	3.683	---	471	0,63	10	0,27	38,56
145.198	0,001	12.860	---	423	0,29	14	0,11	
96.465	0,001	6.197	---	---	---	---	---	135,16
10.358	0,001	13.565	---	1.450	1,45	207	1,53	
148.342	0,001	7.235	---	316	0,21	45	0,621	66,45
214.324	0,002	14.671	---	4.772	2,23	543	3,70	
638.140	0,007	6.918	---	300	0,05		0,072	27,25
567.294	0,006	14.326	---	---	---	---	---	
217.055	0,002	3.020	---	12.196	5,62	180	5,94	19,86
233.727	0,002	4.642	---	12.733	5,45	170	3,66	
522.731	0,005	17.050	---	12.890	2,47	595	3,49	59,52
538.655	0,006	32.061	---	12.677	2,35	943	2,94	

## SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN

## PRODUCTIVE LINES IN PAPER AND CARDBOARD SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L					1969 BRAZIL PRICE UNIT (5/1)
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab	
SHORT FIBRE CELLULOSE	1.965	Tn.	126.738	---	---	126.738	1,52	440,92
	1.967	Tn.	146.241	---	---	146.241	1,68	
GROUNDWOOD PULP	1.965	Tn.	38.077	---	---	38.077	0,46	167,31
	1.967	Tn.	41.676	---	---	41.676	0,48	
LONG FIBRE CELLULOSE	1.965	Tn.	41.625	---	---	41.625	0,50	382,24
	1.967	Tn.	71.409	---	---	71.409	0,82	
NEWSPAPER	1.965	Tn.	116.224	---	---	116.224	1,42	342,78
	1.967	Tn.	103.528	---	---	103.528	1,19	
WRITING AND PRINTING PAPER (EXCEPT NEWS- PAPER)	1.965	Tn.	115.584	---	---	115.584	1,42	988,96
	1.965	Tn.	205.402	171	322	205.251	2,37	
PACKING PAPER	1.965	Tn.	268.333	---	---	268.333	3,30	824,43
	1.967	Tn.	335.109	---	---	335.109	3,86	
MULTIFOIL PAPER SACKS.	1.965	1000 u.	56.534	---	---	56.534	0,68 u.	208,74
	1.967	1000 u.	295.473	---	---	295.473	3,41 u.	
CELLOPHANE SACKS	1.965	1000 u.	320.979	---	---	320.979	3,94	15,80
	1.967	1000 u.	566.965	---	---	566.965	6,54	
KRAFT PAPER SACKS	1.965	1000 u.	2.875.106	---	---	2.875.106	35,36	11,83
	1.967	1000 u.	3.442.136	---	---	3.442.136	39,76	
PLAIN PAPER	1.965	Tn.	86.135	---	---	86.135	1,05	512,97
	1.967	Tn.	88.505	---	---	88.505	1,02	
BOARDS	1.965	Tn.	38.149	---	---	38.149	0,45	850,23
	1.967	Tn.	69.938	---	---	69.938	0,80	

I L	APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab	PROD.VALUE 1,000 N Cr (5)	% (2/4)	B A H I A				1969 BRAZIL PRICE UNIT (5/1)
					PRODUCTION (6/1)	% (7/5)	PROD.VALUE 1,000 N Cr. (7)	% (7/5)	
	126.738	1,52	35.621	---	---	---	---	---	440,92
	146.241	1,68	64.481	---	---	---	---	---	
	38.077	0,46	2.641	---	---	---	---	---	167,31
	41.676	0,48	6.994	---	---	---	---	---	
	41.625	0,50	11.616	---	---	---	---	---	382,24
	71.409	0,82	27.296	---	---	---	---	---	
	116.224	1,42	27.756	---	---	---	---	---	342,78
	103.528	1,19	35.488	---	---	---	---	---	
	115.584	1,42	---	---	---	---	---	---	988,96
	205.251	2,37	203.135	0,083	---	---	---	---	
	268.333	3,30	89.871	---	1.434	0,534	409	0,455	824,43
	335.109	3,86	276.277	---	4.106	1,23	1.777	0,643	
	56.534	0,68 u.	7.194	---	14.630	25,88	240	3,34	208,74
	295.473	3,41 u.	61.681	---	---	---	---	---	
	320.979	3,94	2.826	---	---	---	---	---	15,80
	566.965	6,54	8.961	---	---	---	---	---	
	2.875.106	35,36	27.143	---	43.060	1,50	112	0,412	11,83
	3.442.136	39,76	40.736	---	20.080	0,583	234	0,574	
	86.135	1,05	23.133	---	2.441	2,83	269	1,16	512,97
	88.505	1,02	45.401	---	---	---	---	---	
	38.149	0,45	17.355	---	---	---	---	---	850,23
	69.938	0,80	59.464	---	---	---	---	---	

SECTION 1

SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				APPARENT; CONSUMPTION (4) (A.C.)	t
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT; CONSUMPTION (4) (A.C.)		
ALL KIND OF TIRES AND INNER TUBES.	1.965	U M A	---	174.864	6.332.26	---	---	
	1.967	U M A	---	1.054.119	2.011.097	440.027.000	5.0	
VAN AND BUSES INNER TUBES.	1.965	U M A	77.230	---	---	77.230	---	
	1.967	U M A	988.966	---	2.418	986.548	0.1	
VANS AND BUSES TIRES	1.965	U M	1.171.409	---	---	1.171.409	0.1	
	1.967	U M	2.081.096	---	---	2.081.096	0.1	
MOTORCAR INNER TUBES	1.965	U M A	1.539.677	---	---	1.39.057	0.1	
	1.967	U M A	1.442.619	---	32.846	1.409.773	0.1	
MOTORCAR TIRES	1.965	U M	2.723.467	---	---	2.723.467	0.1	
	1.967	U M	3.338.466	---	---	3.338.466	0.1	
BYCICLE INNER TUBES	1.965	U M A	1.447.842	---	---	1.447.842	0.1	
	1.967	U M A	2.713.513	---	---	2.713.513	0.1	
ACRIMOTOR INNER TUBES	1.965	U M A	68.538	---	---	68.538	0.1	
	1.967	U M A	28.538	---	---	28.538	0.1	
INNER TUBES FOR OTHER USES	1.965	U M A	183.418	---	---	183.418	0.1	
	1.967	U M A	193.041	---	---	193.041	0.1	
BYCICLE TIRES	1.965	U M	1.704.463	---	---	1.704.463	0.1	
	1.967	U M	2.431.377	---	---	2.431.377	0.1	
ACRIMOTOR TIRES	1.965	U M	105.177	---	---	105.177	0.1	
	1.967	U M	107.443	---	---	107.443	0.1	
TIRES FOR OTHER USES	1.965	U M	153.720	---	---	153.720	0.1	
	1.967	U M	150.227	---	---	150.227	0.1	

SECTION 1

## PRODUCTIVE LINES IN NATURAL RUBBER SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B A H I A				1967 BRAZIL PRICE UNIT (5/1)				
			APPARENT; CONSUMPTION (4) (A.C.)	t.u. A.C./Inhab. (5)	PROD.VALUE 1,000 N Cr. (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr. (7)	% (7/5)
ALL KIND OF TIRES AND INNER TUBES.	1.965	U M A	---	---	---	---	---	---	---	---	---
	1.967	U M A	440.027.000	5.0023	11.004.000	0,240	---	---	---	---	---
VAN AND BUSES INNER TUBES.	1.965	U M A	77.230	---	7.959	---	---	---	---	---	---
	1.967	U M A	986.548	0,011	---	---	---	---	---	---	---
VANS AND BUSES TIRES	1.965	U M	1.171.409	0,014	126.270	---	---	---	---	---	25,77
	1.967	U M	2.081.096	0,024	157.687	---	---	---	---	---	---
MOTORCAR INNER TUBES	1.965	U M A	1.39.057	0,018	4.647	---	---	---	---	---	---
	1.967	U M A	1.409.773	0,016	9.687	---	---	---	---	---	---
MOTORCAR TIRES	1.965	U M	2.723.467	0,033	85.897	---	---	---	---	---	20,98
	1.967	U M	3.338.466	0,038	100.116	---	---	---	---	---	---
BYCICLE INNER TUBES	1.965	U M A	1.447.842	0,017	1.881	---	---	---	---	---	---
	1.967	U M A	2.713.513	0,031	6.106	---	---	---	---	---	---
ACRIMOTOR INNER TUBES	1.965	U M A	68.538	---	787	---	---	---	---	---	30,00
	1.967	U M A	28.538	---	858	---	---	---	---	---	---
INNER TUBES FOR OTHER USES	1.965	U M A	183.418	0,002	475	---	---	---	---	---	2,03
	1.967	U M A	193.041	0,002	393	---	---	---	---	---	---
BYCICLE TIRES	1.965	U M	1.704.463	0,002	4.231	---	---	---	---	---	---
	1.967	U M	2.431.377	0,028	10.426	---	---	---	---	---	---
ACRIMOTOR TIRES	1.965	U M	105.177	0,001	13.431	---	---	---	---	---	330,18
	1.967	U M	107.443	0,001	36.336	---	---	---	---	---	---
TIRES FOR OTHER USES	1.965	U M	153.720	0,001	1.891	---	---	---	---	---	28,13
	1.967	U M	150.227	0,002	4.226	---	---	---	---	---	---

SECTION 2

BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				t.u. A.C. Inhab.
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	
RERUBBERIZED TIRES.	1.965	U M	780.770	---	---	780.770	0,0
	1.967	U M	177.999	---	---	177.999	0,0

SECTION 1

DUCTIVE LINES IN NATURAL RUBBER SECTOR

L	B A H I A				1967 BRAZIL PRICE UNIT (5/1)				
	APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab.	PROD.VALUE 1,000 N Cr (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr. (7)	% (7/5)
	780.770	0,009	18.342	---	27.500	3,52	762	4,15	157,90
	177.999	0,002	28.107	---	65.318	36,70	2.127	7,57	

SECTION 2



## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN SKIN

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab.
ALL LINES	1.965		---	---	---	---	---
	1.967		---	---	32.213.859C	---	2,56
LEATHER TANNING	1.965	Tm	633.002	---	889	632.113	0,007
	1.967	Tm	784.823	---	---	784.823	0,009
PIG LEATHER	1.965	Tm	1.842	---	183	1.659	0,020
	1.967	Tm	4.019	---	93	3.926	0,00
FINE FURS	1.965	M <sup>2</sup>	540.895	---	---	540.895	0,006
	1.967	M <sup>2</sup>	446.101	---	23	446.078	0,005
OTHER LEATHER	1.965	Tm	5.988	---	---	5.988	0,073
	1.967	Tm	24.373	---	---	24.373	0,28
SOLE LEATHER	1.965	Tm	31.628	---	---	31.628	0,38
	1.967	Tm	32.409	---	---	32.409	0,38
COWHIDE	1.965	M <sup>2</sup>	11.228.682	---	---	11.228.682	0,138
	1.967	M <sup>2</sup>	11.901.000	---	---	11.901.000	0,137
GLASSED LEATHER	1.965	M <sup>2</sup>	711.758	---	---	711.758	0,008
	1.967	M <sup>2</sup>	945.963	---	---	945.863	0,011
COMPLETE HARNESS SETS (MOUNTS)	1.965	U	16.164	---	---	16.164	---
	1.967	U	37.751	---	---	37.751	---
COMPLETE HARNESS-DRAUGHT SETS	1.965	U	3.481	---	---	3.481	---
	1.967	U	9.448	---	---	9.448	---
WASH-LEATHER	1.965	M <sup>2</sup>	665.967	---	---	665.967	0,008
	1.967	M <sup>2</sup>	743.192	---	---	743.192	0,009

SECTION 1

## PRODUCTIVE LINES IN SKIN AND LEATHER SECTOR

CPTS (1)	Z I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)
	APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab.	PROD.VALUE 1,000 N Cr (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr. (7)	% (7/5)	
1.859C	---	2,56	253.800,000	---	---	---	5.067,000	2,00	---
889	632.113	0,007	2.032	---	---	---	---	---	4,01
	784.823	0,009	3.154	---	---	---	---	---	---
183	1.659	0,020	4.754	---	---	---	---	---	2637,47
93	3.926	0,00	10.600	---	---	---	---	---	---
	540.895	0,006	4.270	---	150.239	27,78	1.117	26,16	17,70
23	446.078	0,005	7.896	---	89.559	20,08	980	12,41	---
	5.988	0,073	8.982	---	101	1,69	90	1,00	1037,09
	24.373	0,28	25.277	---	168	0,689	321	1,27	---
	31.628	0,38	29.660	---	301	0,952	231	0,78	2103,05
	32.409	0,38	68.158	---	354	1,09	758	1,11	---
	11.228.682	0,138	47.274	---	532.034	4,74	1.869	3,95	7,95
	11.901.000	0,137	94.690	---	351.878	2,96	2.810	2,97	---
	711.758	0,008	3.302	---	---	---	---	---	13,10
	945.863	0,011	12.683	---	---	---	---	---	---
	16.164	---	473	---	596	3,69	27	5,71	33,37
	37.751	---	1.260	---	1.388	3,68	100	7,94	---
	3.481	---	96	---	325	9,34	17	17,71	41,17
	9.448	---	389	---	---	---	---	---	---
	665.967	0,008	3.326	---	188	0,028	1	0,03	5,77
	743.192	0,009	4.277	---	3.078	0,414	56	1,31	---

SECTION 2

BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN S

PRODUCTIVE LINES +	YEAR	UNIT	B R A Z I L				t. A. Inhab
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	
CHROMES	1,965	M <sup>2</sup>	3,204,407	---	---	3,204,407	0,0
	1,967	M <sup>2</sup>	3,770,273	---	---	3,770,273	0,0

SECTION 1

TIVE LINES IN SKIN AND LEATHER SECTOR

PRODUCTIVE LINES +	YEAR	UNIT	B A H I A				1967 BRAZIL PRICE UNIT (5/1)					
			APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C. Inhab	PROD. VALUE 1,000 N Cr. (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr. (7)	% (7/5)	
CHROMES	1,965	M <sup>2</sup>	3,204,407	0,039	12,942	---	---	---	---	---	---	7,73
	1,967	M <sup>2</sup>	3,770,273	0,044	29,159	---	4,594	0,122	42	0,144	---	

SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				1967 BRAZIL PRICE UNIT (5/1)
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	
COTTON CLOTH.	1.965	M	1.261.987.000	---	9.052.252	1.252.934.748	0,84
	1.967	M	1.230.398.213	---	---	1.230.398.213	
YUTE CLOTHS	1.965	M	42.454.456	---	---	42.454.456	0,68
	1.967	M	52.161.036	---	---	52.161.036	
ARTIFICIAL LINEN CLOTH	1.965	M	126.823.983	---	---	126.823.983	2,80
	1.967	M	158.687.952	---	---	158.687.952	
WOOL CLOTHS	1.965	M	11.505.864	---	---	11.505.864	10,37
	1.967	M	6.288.652	---	---	6.288.652	
KNITTED DRESSES	1.965	U M	481.999	---	---	481.999	16,42
	1.967	U M	1.399.561	---	---	1.399.561	
KNITTED BLOUSES	1.965	U M	4.469.380	---	---	4.469.380	9,18
	1.967	U M	6.847.608	---	---	6.847.608	
SHIRTS	1.965	U M A	4.095.194	---	---	4.095.194	1,36
	1.967	U M A	16.642.940	---	---	16.642.940	
BATHING SUITS (MALLIOTS)	1.965	U M	926.113	---	---	926.113	13,71
	1.967	U M	952.561	---	---	952.561	
CANVAS	1.965	M	6.394.009	---	9.052.252	---	2,49
	1.967	M	22.049.791	---	---	22.049.791	
CHILDREN'S SOCKS	1.965	PAR	8.262.249	---	---	8.262.249	0,72
	1.967	PAR	13.001.516	---	---	13.001.516	
MEN'S SOCKS	1.965	PAR	23.953.275	---	---	23.953.275	1,07
	1.967	PAR	26.421.112	---	---	26.421.112	

SECTION 1

## F PRODUCTIVE LINES IN TEXTILE SECTOR

PRODUCTIVE LINES	YEAR	UNIT	I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)
			APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)	
COTTON CLOTH.	1.965	M	1.252.934.748	15,41	601.529	---	18.118.777	1,44	6.964	1,16	0,84
	1.967	M	1.230.398.213	14,21	1.042.040	---	18.868.349	1,53	14.342	1,38	
YUTE CLOTHS	1.965	M	42.454.456	0,51	17.080	---	2.326.985	5,48	1.117	6,54	0,68
	1.967	M	52.161.036	0,60	35.633	---	2.463.965	4,72	1.785	5,01	
ARTIFICIAL LINEN CLOTH	1.965	M	126.823.983	1,55	218.014	---	---	---	---	---	2,80
	1.967	M	158.687.952	1,8	445.727	---	---	---	---	---	
WOOL CLOTHS	1.965	M	11.505.864	0,13	52.434	---	---	---	---	---	10,37
	1.967	M	6.288.652	0,06	65.259	---	---	---	---	---	
KNITTED DRESSES	1.965	U M	481.999	0,005	4.792	---	---	---	---	---	16,42
	1.967	U M	1.399.561	0,016	22.992	---	100	0,007	2	0,009	
KNITTED BLOUSES	1.965	U M	4.469.380	0,052	28.257	---	210	0,005	1	0,004	9,18
	1.967	U M	6.847.608	0,072	62.875	---	760	0,011	9	0,014	
SHIRTS	1.965	U M A	4.095.194	0,050	3.774	---	---	---	---	---	1,36
	1.967	U M A	16.642.940	0,192	22.699	---	---	---	---	---	
BATHING SUITS (MALLIOTS)	1.965	U M	926.113	0,011	2.806	---	---	---	---	---	13,71
	1.967	U M	952.561	0,011	13.066	---	---	---	---	---	
CANVAS	1.965	M	6.394.009	---	7.651	---	---	---	---	---	2,49
	1.967	M	22.049.791	0,254	55.019	---	---	---	---	---	
CHILDREN'S SOCKS	1.965	PAR	8.262.249	0,099	3.697	---	---	---	---	---	0,72
	1.967	PAR	13.001.516	0,150	9.417	---	---	---	---	---	
MEN'S SOCKS	1.965	PAR	23.953.275	0,28	15.624	---	---	---	---	---	1,07
	1.967	PAR	26.421.112	0,30	28.361	---	---	---	---	---	

SECTION 2

BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN THE TEXTILE SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B R A S I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)					
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab.	APPARENT CONSUMPTION (1) (A.C.)	t.u. A.C./ Inhab.	PROD.VALUE 1,000 N Cr (5)		% (2/4)	PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr (7)	% (7/5)
LADIES STOCKINGS	1.965	PAR	17.879.573	---	---	17.879.573	0,21	7.879.573	0,21	12.513	---	---	---	---	---	1,12
	1.967	PAR	28.959.894	---	---	28.959.894	0,33	28.959.894	0,33	32.552	---	---	---	---	---	

SECTION 1

SECTION 2

Table: 2.3.10 (Cont.)

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN CLOTHING AND SHOE SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				Z I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4)(A.C.)	APPARENT CONSUMPTION (4)(A.C.)	t.u. A.C./ Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)	
LEATHER SHOES	1.965	PAR	51.380.264	---	64.724	51.315.540	51.315.540	0,61	209.078	---	---	---	---	---	6,50
	1.967	PAR	58.725.008	---	62.019	58.662.989	58.662.989	0,67	381.889	---	286.904	0,490	8.953	2,34	
SANDALS AND SLIPPERS OF ALL TYPES	1.965	PAR	7.056.380	---	---	7.056.380	7.056.380	0,086	6.294	---	41.338	0,59	68	1,08	2,40
	1.967	PAR	7.151.292	---	---	7.151.292	7.151.292	0,082	17.164	---	99.488	1,39	314	1,83	
BLOUSES ALL TYPES EXCEPT KNITTED	1.965	U M	2.071.157	---	---	2.071.157	2.071.157	0,023	10.034	---	800	0,04	9	0,09	8,00
	1.967	U M	1.953.949	---	---	1.953.949	1.953.949	0,023	15.649	---	2.500	0,13	17	0,11	
MEN'S TROUSERS ALL TYPES	1.965	UMA	6.811.928	---	---	6.811.928	6.811.928	0,081	44.015	---	110.141	1,62	742	1,69	7,67
	1.967	UMA	15.657.698	---	---	15.657.698	15.657.698	0,181	120.249	---	258.247	1,65	2.097	1,74	
MEN'S SHIRTS ALL TYPES	1.965	UMA	14.261.364	---	---	14.261.364	14.261.364	0,17	55.749	---	118.481	0,831	257	0,46	1,27
	1.967	UMA	17.595.250	---	---	17.595.250	17.595.250	0,20	127.996	---	202.099	1,15	883	0,69	
CHILDRE'S SHIRTS ALL TYPES	1.965	UMA	1.848.660	---	---	1.848.660	1.848.660	0,022	5.787	---	24.489	1,32	80	1,38	4,61
	1.967	UMA	1.868.055	---	---	1.868.055	1.868.055	0,021	8.626	---	25.000	1,33	158	1,83	
ME'S SUITS	1.965	U M	1.790.483	---	---	1.790.483	1.790.483	0,021	36.664	---	---	---	---	---	41,45
	1.967	U M	1.314.591	---	---	1.314.591	1.314.591	0,015	54.500	---	---	---	---	---	

SECTION 1

SECTION 2

BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				t.u. A.C. Inhab
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	
DOMESTIC SOAPS	1.965	Kg	231.145.495	---	---	231.145.495	2,84
	1.967	Kg	282.922.412	---	---	282.922.412	3,26
INDUSTRIAL SOAPS	1.965	Kg	5.215.656	879.000	---	6.094.656	0,073
	1.967	Kg	6.225.480	936.000	---	7.161.480	0,082
DETERGENTS	1.965	Kg	31.862.611	3.065.000	---	34.927.611	0,42
	1.967	Kg	63.042.145	3.698.000	---	66.740.145	0,77

SECTION 1

PRODUCTIVE LINES IN PERFUME SECTOR

L	APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)	B A H I A				1967 BRAZIL PRICE UNIT (5/1)
					PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)	
	231.145.495	2,84	120.971	---	6.602.660	2,86	2.793	2,31	0,68
	282.922.412	3,26	194.837	---	11.079.677	3,92	5.915	3,04	
	6.094.656	0,073	2.698	14,42	6.380	0,12	3	0,11	0,90
	7.161.480	0,082	5.658	13,07	4.700	0,073	4	0,071	
	34.927.611	0,42	33.410	8,78	---	---	---	---	1,31
	66.740.145	0,77	82.699	5,54	---	---	---	---	

SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L					t.u. A.C. Inhab
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)		
CELLULOSE ACETATE	1.965	Tn.	---	---	---	---		
	1.967	Tn.	16.590	774	335	17.029	0,1	
ACETYLENE	1.965	Tn.	5.087	---	---	5.087	0,0	
	1.967	Tn.	6.738	---	---	6.738	0,0	
ACETONE	1.965	Tn.	3.400	209	---	4.309	0,0	
	1.967	Tn.	3.888	1.176	---	5.064	0,0	
ACETIC ACID	1.965	Tn.	9.664	---	---	9.664	0,1	
	1.967	Tn.	9.734	---	---	9.734	0,1	
CITRIC ACID	1.965	Tn.	876	876	---	1.752	0,0	
	1.967	Tn.	1.501	1.104	---	2.605	0,0	
ISOOCTHYLIC ALCOHOL	1.965	L.	1.000.000	---	---	---	0,0	
	1.967	L.	2.220.000	---	---	2.220.000	0,0	
FTALIC ANHYDRIDE	1.965	Tn.	3.799	2.309	---	6.108	0,0	
	1.967	Tn.	5.686	2.326	---	8.012	0,0	
MALEIC ANHYDRIDE	1.965	Tn.	190	423	---	613	0,0	
	1.967	Tn.	201	406	---	607	0,0	
BENZENE	1.965	Tn.	120	1	---	121	0,0	
	1.967	Tn.	12.170	13.756	---	25.926	0,3	
CARBON BISULFITE	1.965	Tn.	5.308	---	---	5.308	0,0	
	1.967	Tn.	11.823	---	---	11.823	0,1	
POLIVINYL CHLORIDE	1.965	Tn.	15.481	---	---	15.481	0,2	
	1.967	Tn.	20.142	---	---	20.142	0,2	

SECTION 1

Table: 2.3.12 (Cont.)

## OF PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B A H I A				1967 BRAZIL PRICE UNIT (5/1)							
			APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C. Inhab	PROD. VALUE 1,000 N Cr (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)			
CELLULOSE ACETATE	1.965	Tn.	---	---	---	---	---	---	---	---	---	---	---	1.79270
	1.967	Tn.	17.029	0,19	29.741	4,5	---	---	---	---	---	---	---	---
ACETYLENE	1.965	Tn.	5.087	0,06	10.032	---	---	---	---	---	---	---	---	2.28183
	1.967	Tn.	6.738	0,08	15.375	---	---	---	---	---	---	---	---	---
ACETONE	1.965	Tn.	4.309	0,05	3.387	4,9	---	---	---	---	---	---	---	1.115
	1.967	Tn.	5.064	0,06	4.335	23,2	---	---	---	---	---	---	---	---
ACETIC ACID	1.965	Tn.	9.664	0,11	7.346	---	---	---	---	---	---	---	---	1.039
	1.967	Tn.	9.734	0,11	10.116	---	---	---	---	---	---	---	---	---
CITRIC ACID	1.965	Tn.	1.752	0,02	1.091	50	---	---	---	---	---	---	---	2.542
	1.967	Tn.	2.605	0,03	3.815	42,4	---	---	---	---	---	---	---	---
ISOOCTHYLIC ALCOHOL	1.965	L.	---	0,00	2.	---	---	---	---	---	---	---	---	0,16
	1.967	L.	2.220.000	0,03	357	---	---	---	---	---	---	---	---	---
FTALIC ANHYDRIDE	1.965	Tn.	6.108	0,07	3.690	37,8	---	---	---	---	---	---	---	1.226
	1.967	Tn.	8.012	0,09	6.963	29,0	---	---	---	---	---	---	---	---
MALEIC ANHYDRIDE	1.965	Tn.	613	0,007	223	69,0	---	---	---	---	---	---	---	1.831
	1.967	Tn.	607	0,007	368	66,9	---	---	---	---	---	---	---	---
BENZENE	1.965	Tn.	121	0,002	18	19,9	---	---	---	---	---	---	---	309
	1.967	Tn.	25.926	0,30	3.755	53,1	---	---	---	---	---	---	---	---
CARBON BISULFITE	1.965	Tn.	5.308	0,06	1.778	---	---	---	---	---	---	---	---	421
	1.967	Tn.	11.823	0,13	4.980	---	---	---	---	---	---	---	---	---
POLIVINYL CHLORIDE	1.965	Tn.	15.481	0,2	19.290	---	---	---	---	---	---	---	---	1.502
	1.967	Tn.	20.142	0,23	30.252	---	---	---	---	---	---	---	---	---

SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B R A S I L				t.u. A.C./ inhab.
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (A.C.)	
DIPHENYL DICHLORO TRICHOETHANE (D.D.T.)	1.965	Tn.	---	3.423	---	3.423	0,0
	1.969	Tn.	1.499	1.418	---	2.917	0,0
ETHANE	1.965	Tn.	---	---	---	---	---
	1.967	Tn.	7.211	---	---	7.211	0,0
STYRENE	1.965	Tn.	10.389	---	---	10.389	0,1
	1.967	Tn.	13.408	---	---	13.408	0,1
PHENOL	1.965	Tn.	3.944	---	---	3.944	0,0
	1.967	Tn.	5.015	1.427	---	6.442	0,0
FORMALDEHYDE 100%	1.965	Tn.	5.657	---	---	5.657	0,0
	1.967	Tn.	17.380	---	---	17.380	0,0
FREON	1.965	Tn.	731	---	---	731	0,0
	1.967	Tn.	863	---	---	863	0,0
PHTALATE OF DI-BUTYL AND ISO-BUTYL	1.965	Tn.	239	321	---	560	0,0
	1.967	Tn.	2.010	1.137	---	3.147	0,0
PHTALATE OF DIOCTYLO AND ISOCTYLO	1.965	Tn.	3.082	1.315	---	4.397	0,0
	1.967	Tn.	5.913	2.005	---	7.918	0,0
GLYCERINE 100 %	1.965	Tn.	4.030	---	---	4.030	0,0
	1.967	Tn.	4.655	---	---	4.655	0,0
HEXACHLOROCYCLO-HEXANE	1.965	Tn.	10.175	---	---	10.175	0,0
	1.967	Tn.	3.733	---	---	3.733	0,0
RAW NAPHTALENE	1.965	Tn.	205	3.359	---	3.564	0,0
	1.969	Tn.	2.598	3.917	---	6.514	0,0

SECTION 1

## LINES IN THE CHEMISTRY SECTOR

APPARENT CONSUMPTION (4) (A.C.)	t.u. A.C./ inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)	B A H I A				1967 BRAZIL PRICE UNIT (5/1)
				PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)	
3.423	0,042	---	100	---	---	---	---	1.522
2.917	0,03	2.281	48,6	---	---	---	---	---
---	---	---	---	---	---	---	---	429
7.211	0,08	3.096	---	---	---	---	---	---
10.389	0,1	7.050	---	---	---	---	---	1.020
13.408	0,15	13.663	---	---	---	---	---	---
3.944	0,048	4.004	---	---	---	---	---	1.046
6.442	0,07	5.244	32,1	---	---	---	---	---
5.657	0,070	2.109	---	---	---	---	---	515
17.380	0,22	8.944	---	---	---	---	---	---
731	0,010	2.244	---	---	---	---	---	4.703
863	0,01	4.063	---	---	---	---	---	---
560	0,006	342	37,3	---	---	---	---	3.009
3.147	0,036	6.048	36,1	---	---	---	---	---
4.397	0,054	4.071	30	---	---	---	---	1.572
7.918	0,09	9.294	25,	---	---	---	---	---
4.030	0,049	4.605	---	---	---	---	---	1.941
4.655	0,054	9.036	---	27	0,6	---	---	---
10.175	0,12	4.145	---	---	---	---	---	760
3.733	0,043	2.837	---	---	---	---	---	---
3.564	0,043	231	94,2	---	---	---	---	229
6.514	0,075	595	54,0	---	---	---	---	---

SECTION 2



## BASIC DATA FOR PRESELECTION OF PRODUCTIVE

PRODUCTIVE LINES	YEAR	UNIT	B R A S I L				1967 BRAZIL PRICE UNIT (5/1)
			PRODUCTION (1)	IMPORTS (2)	EXPORTS (3)	APPARENT CONSUMPTION (4) (C.A/)	
REFINED NAPHTHALENE	1.965	Tn.	---	---	---	---	---
	1.967	Tn.	102	---	---	102	---
ETHYLIC AND METHYLIC PARATHYNE.	1.965	Tn.	---	---	---	---	---
	1.967	Tn.	510	---	---	510	---
PROPANE	1.965	Tn.	---	---	---	---	---
	1.967	Tn.	4.581	---	---	4.581	---
CARBON TETRACHLORIDE	1.965	Tn.	1.120	---	---	1.120	---
	1.967	Tn.	2.381	---	---	2.381	---
TOLUENE	1.965	Tn.	---	1	---	1	---
	1.967	Tn.	1.316	11.415	---	11.731	---
TRICHLOROETHYLENE	1.965	Tn.	2.914	---	---	2.914	---
	1.967	Tn.	3.891	---	---	3.891	---
UREA	1.965	Tn.	---	7.302	---	7.302	---
	1.967	Tn.	1.041	10.238	---	11.279	---
XYLENE (ORTHO, METHA AND PARA)	1.965	Tn.	1	1	---	2	---
	1.967	Tn.	275	5.746	---	6.021	---
METHYL ALCOHOL	1.965	L.	1.000	2.560.000	---	2.561.000	---
	1.967	L.	9.391	3.521.000	---	3.530.000	---
ETHYL ALCOHOL	1.965	L.	457.280.000	---	5.480.000	451.000.000	---
	1.967	L.	683.935.215	53.983.000	---	737.918.215	---
ISOPROPYLIC ALCOHOL	1.965	L.	2.589.000	8.000	---	2.867.000	---
	1.967	L.	1.130.000	101.000	---	1.231.000	---

SECTION 1

TECNIBERIA

U.N.D.P./U.N.I.D.O.

## ION OF PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

I L	B A H I A				1967 BRAZIL PRICE UNIT (5/1)				
	APPARENT CONSUMPTION (4) (C.A/)	U.C./ Inhab.	PROD.VALUE 1,000 N Cr (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr (7)	% (7/5)
	---	---	---	---	---	---	---	---	---
	102	0,001	19	---	---	---	---	---	---
	---	---	---	---	---	---	---	---	6,400
	510	0,005	3.264	---	---	---	---	---	---
	---	---	---	---	---	---	---	---	66,8
	4.581	0,05	306	---	1.599	34,9	193	63,1	---
	1.120	0,013	582	---	---	---	---	---	700
	2.381	0,030	1.857	---	---	---	---	---	---
	1	---	---	100	---	---	---	---	389
	12.731	0,14	512	90	---	---	---	---	---
	2.914	0,035	2.082	---	---	---	---	---	1.089
	3.891	0,045	4.327	---	---	---	---	---	---
	7.302	0,090	---	100	---	---	---	---	1.908
	11.279	0,13	1.986	90,8	---	---	---	---	---
	2	---	16	50	---	---	---	---	440
	6.021	0,070	121	95,4	---	---	---	---	---
	2.561.000	0,031	5	100	---	---	---	---	0,585
	3.530.000	0,048	5.494	99,7	---	---	---	---	---
	451.000.000	5,55	51.081	---	---	---	---	---	0,16
	737.918.215	8,52	114.819	7,3	---	---	---	---	---
	2.867.000	0,035	2.523	0,3	---	---	---	---	0,19
	1.231.000	0,014	216	8,2	---	---	---	---	---

SECTION 2

INDUSTRIAL SURVEY OF BAHIA

U.N.I.D.O.

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINE

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L					t.u. A.C./ Inhab.
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4)(C.A.)		
NYLON FIBRES AND RESIN	1.965	Tn.	13.191	349	---	13.540	0,16	
	1.967	Tn.	14.900	795	---	15.695	0,18	
KEROSENE (AVIATION)	1.965	L.	---	276.099.000	---	276.099.000	3,39	
	1.967	L.	199.961.000	222.003.000	---	421.964.000	4,87	
OXALIC ACID	1.965	Tn.	1.154	---	554	600	0,007	
	1.967	Tn.	1.404	---	887	2.241	0,02	
MIXED FERTI- LIZERS	1.965	Tn.	443.822	471.881	---	915.703	11,2	
	1.967	Tn.	872.579	762.976	---	1.635.555	1,88	
LIQUATED GAS	1.965	Tn.	575.307	---	---	575.307	7,07	
	1.967	Tn.	644.379	---	---	644.379	7,44	
GASOLINE BELOW 90 OCT.	1.965	Tn.	5.599.795.000	---	---	5.599.755.000	68,87	
	1.967	Tn.	6.574.872.378	---	---	6.574.872.378	76,94	
POLYESTER RESINS	1.965	Tn.	3.467	1.199	---	4.666	0,057	
	1.967	Tn.	6.875	552	---	7.427	0,085	
POLYSTYRENE RESINS	1.965	Tn.	10.295	---	---	10.299	0,12	
	1.967	Tn.	21.392	552	---	21.944	0,25	
UREA RESINS	1.965	Tn.	14.814	308	---	15.122	0,18	
	1.967	Tn.	4.066	405	---	4.471	0,051	
ASPHALT	1.965	Tn.	385.591	---	---	385.591	4,74	
	1.967	Tn.	454.769	---	---	454.769	5,25	
SYNTHETIC RUBBER	1.965	Tn.	37.257	---	---	37.257	0,45	
	1.967	Tn.	51.627	---	---	51.627	0,5	

## SECTION 1

Table: 2.3.12 (Cont.)

## PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B A H I A				1967 BRAZIL PRICE UNIT				
			APPARENT CONSUMPTION (1)(C.A.)	t.u. A.C./ Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)
NYLON FIBRES AND RESIN	1.965	Tn.	13.540	0,16	101.347	2,6	---	---	---	---	0,19
	1.967	Tn.	15.695	0,18	148.553	5,1	---	---	---	---	---
KEROSENE (AVIATION)	1.965	L.	276.099.000	3,39	---	100	---	---	---	---	0,00
	1.967	L.	421.964.000	4,87	16.197	52,6	---	---	---	---	---
OXALIC ACID	1.965	Tn.	600	0,007	901	---	---	---	---	---	1.152
	1.967	Tn.	2.241	0,025	1.618	---	---	---	---	---	---
MIXED FERTI- LIZERS	1.965	Tn.	915.703	11,26	60.896	51,5	---	---	---	---	187
	1.967	Tn.	1.635.555	1,88	162.936	46,5	623	0,00	122	0,1	---
LIQUATED GAS	1.965	Tn.	575.307	7,07	57.010	---	140.842	24,5	13.820	24,2	133,7
	1.967	Tn.	644.379	7,44	56.131	---	157.282	23,7	19.487	22,6	---
GASOLINE BELOW 90 OCT.	1.965	Tn.	5.599.755.000	68,87	296.251	---	946.191.000	16,9	51.513	17,4	0,06
	1.967	Tn.	6.574.872.378	76,94	416.966	---	19.487	---	19.487	4,7	---
POLYESTER RESINS	1.965	Tn.	4.666	0,057	14.824	25,7	---	---	---	---	6.927
	1.967	Tn.	7.427	0,085	47.626	7,5	---	---	---	---	---
POLYSTYRENE RESINS	1.965	Tn.	10.299	0,12	14.158	---	---	---	---	---	1.667
	1.967	Tn.	21.944	0,25	35.675	2,4	---	---	---	---	---
UREA RESINS	1.965	Tn.	15.122	0,18	13.568	2,0	---	---	---	---	926
	1.967	Tn.	4.471	0,051	3.805	9,0	---	---	---	---	---
ASPHALT	1.965	Tn.	385.591	4,74	25.381	---	---	---	---	---	96,7
	1.967	Tn.	454.769	5,25	43.963	---	30.078	6,6	2.568	5,8	---
SYNTHETIC RUBBER	1.965	Tn.	37.257	0,45	36.846	---	---	---	---	---	1.585
	1.967	Tn.	51.627	0,5	78.713	---	---	---	---	---	---

## SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				t A. In
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)	
POLYVINYL ACETATE RESINS	1.965	Tn.	1.100	---	---	1.100	9.
	1.967	Tn.	4.805	---	---	4.805	0.
PHTHALIC ALCHYLIC RESINS	1.965	Tn.	978	---	---	272	0.
	1.967	Tn.	2.055	---	---	2.055	0.
NON BENZENIC ALCHYLIC RESINS	1.965	Tn.	120	---	---	120	0.
	1.967	Tn.	121	---	---	121	0.
PHENOFORMAL- DEHYDE RESINS	1.965	Tn.	1.170	---	---	1.170	0.
	1.967	Tn.	3.241	---	---	3.241	0.
MELAMINE FORMAL- DEHYDE RESINS	1.965	Tn.	1.078	---	---	1.078	0.
	1.967	Tn.	404	---	---	404	0.
POLYETHYLENE RESINS	1.965	Tn.	17.967	2.398	---	20.365	0.
	1.967	Tn.	23.587	11.265	---	34.852	0.
CHLORHYDRIC ACID 100%	1.965	Tn.	27.598	---	---	27.598	0.
	1.967	Tn.	28.392	---	---	28.392	0.
PHOSPHORIC ACID 100%	1.965	Tn.	---	1.597	---	1.597	0.
	1.967	Tn.	2	2.001	---	2.003	0.
NITRIC ACID 100%	1.965	Tn.	3.454	---	---	3.454	0.
	1.967	Tn.	31.451	---	---	31.451	0.
SULPHURIC ACID	1.965	Tn.	252.279	---	---	252.279	0.
	1.967	Tn.	365.113	---	---	365.113	0.
AMMONIA	1.965	Tn.	5.336	---	---	5.336	0.
	1.967	Tn.	143	---	---	143	0.

SECTION 1

TECNIBERIA

U.N.D.P./U.N.I.D.O.

Table: 2.3.12 (Cont.)

## PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

I L	B A H I A				1967 BRAZIL PRICE UNIT (5/1)				
	APPARENT CONSUMPTION (4) (C.A.)	t.u. A.C./ Inhab.	PROD.VALUE 1,000 N Cr (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr (7)	% (7/5)
	1.100	0.013	1.462	---	---	---	---	---	1.656
	4.305	0.055	7.959	---	---	---	---	---	1.295
	272	0.011	835	---	---	---	---	---	2.397
	2.055	0.023	2.660	---	---	---	---	---	1.453
	120	0.001	164	---	---	---	---	---	1.668
	121	0.001	290	---	---	---	---	---	1.741
	1.170	0.014	1.177	---	---	---	---	---	115
	3.241	0.037	4.710	---	---	---	---	---	1.500
	1.078	0.012	1.078	---	---	---	---	---	359
	404	0.004	674	---	---	---	---	---	110
	20.365	0.24	27.412	12	---	---	---	---	1.726
	34.852	0.40	41.068	32,3	---	---	---	---	
	27.598	0.33	2.205	---	---	---	---	---	
	28.392	0.32	1.267	---	---	---	---	---	
	1.597	0.023	---	100	---	---	---	---	
	2.003	0.02	3	100	---	---	---	---	
	3.454	0.042	1.637	---	---	---	---	---	
	31.451	0.36	11.202	---	---	---	---	---	
	252.279	3,10	14.457	---	---	---	---	---	
	365.113	4,22	40.371	---	---	---	---	---	
	5.336	0.065	2.701	---	---	---	---	---	
	143	0.002	252	---	---	---	---	---	

SECTION 2

INDUSTRIAL SURVEY OF BAHIA

P./U.N.I.D.O.

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				t. A. In
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)	
CALCIUM CARBONATE (PRECIPITATE)	1.965	Tn.	10.411	---	---	10.411	0.
	1.967	Tn.	10.193	---	---	10.193	0.
SODIUM CARBONATE	1.965	Tn.	75.033	4.606	---	79.639	0.
	1.967	Tn.	91.965	2.001	---	93.966	1.
CARBURET OF CALCIUM	1.965	Tn.	64.401	140	---	64.541	0.
	1.967	Tn.	82.266	501	---	83.167	0.
CHLORIDE	1.965	Tn.	18.653	---	---	18.653	0.
	1.967	Tn.	17.214	---	---	17.214	0.
TITANIUM DIOXIDE	1.965	Tn.	871	---	---	871	0.
	1.967	Tn.	59	---	---	59	0.
AMMONIUM PHOSPHATE (MONO & BI)	1.965	Tn.	100	---	---	100	0.
	1.967	Tn.	383	---	---	383	0.
TRIPLE SODIUM PHOSPHATE	1.965	Tn.	1	5.427	---	5.428	0.
	1.967	Tn.	2.464	13.027	---	15.491	0.
SODIUM HYDROXIDE	1.965	Tn.	90.293	96.309	---	186.602	2.
	1.967	Tn.	113.289	127.348	---	241.137	2.
SODIUM HYPOCHLORITE	1.965	Tn.	34.882	---	---	34.882	0.
	1.967	Tn.	29.292	---	---	29.292	0.
CARBON BLACK	1.965	Tn.	22.644	2.815	---	25.459	0.
	1.967	Tn.	30.667	5.356	50	36.023	0.
AMMONIUM NITRATE 100 %	1.965	Tn.	6.538	---	---	6.538	0.
	1.967	Tn.	21.334	---	---	21.334	0.

SECTION 1

Table: 2.3.12 (Cont.)

## PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

APPARENT CONSUMPTION (4) (C.A.)	t.u. A.C./ Inhab	PROD. VALUE 1,000 N Cr (5)	% (2/4)	B A H I A				1967 BRAZIL PRICE UNIT (5/1)
				PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)	
10.411	0,12	2.801	---	---	---	---	---	100
10.193	0,11	4.080	---	---	---	---	---	
79.639	0,95	28.364	5,8	---	---	---	---	433
93.966	1,08	4.080	2,1	---	---	---	---	
64.541	0,77	14.824	0,2	---	---	---	---	314
83.167	0,96	25.938	0,7	---	---	---	---	
18.653	0,22	2.313	---	---	---	---	---	169
17.214	0,20	2.907	---	---	---	---	---	
871	0,010	1.395	---	---	---	---	---	1.940
59	0,007	115	---	---	---	---	---	
100	0,001	11	---	---	---	---	---	154
383	0,004	59	---	---	---	---	---	
5.428	0,06	4	100	---	---	---	---	426
15.491	0,178	1.050	84,1	---	---	---	---	
186.602	2,24	32.516	51,6	---	---	---	---	427
241.137	2,79	48.382	53,0	---	---	---	---	
34.882	0,42	2.309	---	---	---	---	---	113
29.292	0,34	3.309	---	---	---	---	---	
25.459	0,31	13.033	11,1	---	---	---	---	958
30.667	0,42	29.380	15,0	---	---	---	---	
6.538	0,07	1.961	---	---	---	---	---	167
21.334	0,25	3.565	---	---	---	---	---	

SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINE

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				1967 BRAZIL PRICE UNIT (5/1)
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)	
CALCIUM NITRATE	1.965	Tn.	57.687	---	---	57.687	139,5
	1.967	Tn.	35.434	---	---	35.434	
LEAD OXIDE	1.965	Tn.	---	---	---	---	300
	1.967	Tn.	10	596	---	606	
IRON OXIDE	1.965	Tn.	4.285	760	---	5.045	1.10
	1.967	Tn.	7.563	1.180	---	8.743	
ZINC OXIDE	1.965	Tn.	4.062	---	---	4.062	1.23
	1.967	Tn.	4.856	---	---	4.856	
OXYGEN	1.965	m <sup>3</sup>	29.331.943	---	---	29.331.943	0,2
	1.967	m <sup>3</sup>	43.611.759	---	---	43.611.759	
HYDROGEN PEROXIDE	1.965	Tn.	---	---	---	---	1.007
	1.967	Tn.	432	---	---	432	
SODIUM SILICATE	1.965	Tn.	20.874	13	---	20.887	1
	1.967	Tn.	24.221	1.026	---	25.247	
AMMONIUM SULFATE	1.965	Tn.	2.942	---	---	2.942	1,2
	1.967	Tn.	12.915	---	---	12.915	
GLAUBER SALT	1.965	Tn.	13.233	10.476	---	23.709	0,6
	1.967	Tn.	1.260	14.691	---	15.951	
SIMPLE SUPER- PHOSPHATES (IN TN. OF P <sub>2</sub> O <sub>5</sub> )	1.965	Tn.	264.921	---	---	264.921	1.067
	1.967	Tn.	34.059	---	---	34.059	
90 OCTANES GASOLINE OR ABOVE	1.965	L.	33.321.000	---	---	33.321.000	0,67
	1.967	L.	53.134.000	---	---	53.134.000	

## SECTION 1

Table: 2.3.12 (Cont.)

## PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)
			APPARENT CONSUMPTION (4) (C.A.)	t.u. A.C./ Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)	
CALCIUM NITRATE	1.965	Tn.	57.687	0,69	2.327	---	---	---	---	---	139,5
	1.967	Tn.	35.434	0,41	6.714	---	---	---	---	---	
LEAD OXIDE	1.965	Tn.	---	---	---	---	---	---	---	---	300
	1.967	Tn.	10	0,007	8	98,3	---	---	---	---	
IRON OXIDE	1.965	Tn.	5.045	0,062	2.777	15	---	---	---	---	1.10
	1.967	Tn.	8.743	0,101	9.029	13,5	---	---	---	---	
ZINC OXIDE	1.965	Tn.	4.062	0,06	4.345	---	---	---	---	---	1.23
	1.967	Tn.	4.856	0,056	6.908	---	---	---	---	---	
OXYGEN	1.965	m <sup>3</sup>	29.331.943	0,35	15.955	---	---	---	---	---	0,2
	1.967	m <sup>3</sup>	43.611.759	0,50	37.202	---	---	---	---	---	
HYDROGEN PEROXIDE	1.965	Tn.	---	---	---	---	---	---	---	---	1.007
	1.967	Tn.	432	0,004	1.567	---	---	---	---	---	
SODIUM SILICATE	1.965	Tn.	20.887	0,25	4.322	0,01	---	---	---	---	1
	1.967	Tn.	25.247	0,29	6.908	4,1	---	---	---	---	
AMMONIUM SULFATE	1.965	Tn.	2.942	0,036	4,3	---	---	---	---	---	1,2
	1.967	Tn.	12.915	0,150	1.908	---	---	---	---	---	
GLAUBER SALT	1.965	Tn.	23.709	0,28	4.830	44,2	---	---	---	---	0,6
	1.967	Tn.	15.951	0,18	1.032	92,1	---	---	---	---	
SIMPLE SUPER- PHOSPHATES (IN TN. OF P <sub>2</sub> O <sub>5</sub> )	1.965	Tn.	264.921	3,25	27.571	---	---	---	---	---	1.067
	1.967	Tn.	34.059	3,62	36.345	---	---	---	---	---	
90 OCTANES GASOLINE OR ABOVE	1.965	L.	33.321.000	0,4	2.111	---	---	---	---	---	0,67
	1.967	L.	53.134.000	0,6	3.905	---	---	---	---	---	

## SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L					t.u. A.C. Inhab.
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)		
KEROSENE FOR OTHER USES	1.965	L.	547.062.000	---	---	547.062.000	2,1	
	1.967	L.	603.591.004	---	---	603.591.004	2,4	
COMBUSTIBLE OIL	1.965	Tn.	5.384.627	---	---	5.384.627	66,1	
	1.967	Tn.	5.767.814	---	---	5.717.814	66,1	
DIESEL OIL	1.965	Tn.	3.418.326	---	---	3.418.326	41,1	
	1.967	Tn.	3.891.272	---	---	3.891.272	44,1	
LUBRICATING OILS	1.965	Tn.	47.652	---	---	47.652	0,6	
	1.967	Tn.	62.738	---	---	62.738	0,7	
LIQUID AND PASTE FLOOR WAX	1.965	Tn.	16.905	---	---	16.905	0,2	
	1.967	Tn.	30.352	---	---	30.352	0,3	
RAYON THREADS	1.965	Tn.	23.521	---	---	23.521	0,4	
	1.967	Tn.	28.369	---	---	20.369	0,2	
FORMICIDES	1.965	Tn.	5.333	---	---	5.333	0,0	
	1.967	Tn.	4.750	---	---	4.750	0,0	
MATCHES	1.965	1000.u	90.062.912	---	---	90.062.912	1,0	
	1.967	1000.u	122.461.348	---	---	122.461.348	1,4	
INSECTICIDES EXCEPT FORMICIDES	1.965	Tn.	46.079	10.536	---	56.615	0,6	
	1.967	Tn.	49.892	10.866	---	49.892	0,5	
RAW COTTON-SEED OIL	1.965	Tn.	100.619	---	---	100.619	1,2	
	1.967	Tn.	67.446	---	2.943	64.503	0,7	
PEANUT OIL	1.967	Tn.	74.056	---	7.791	67.065	0,8	
	1.968	Tn.	46.378	---	---	46.738	0,5	

## SECTION 1

Table: 2.3.12 (Cont.)

## PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

L	B A H I A				1967 BRAZIL PRICE UNIT (5/1)				
	APPARENT CONSUMPTION (4) (C.A.)	t.u. A.C./ Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/5)		PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)
	247.062.000	6,5	29.932	---	244.495.000	44,7	12.253	40,9	0,0
	603.591.004	7,0	50.981	---	320.775.000	37,6	19.109	37,7	
	5.384.627	66,2	231.907	---	524.745	9,7	21.632	9,7	50
	5.717.814	66,04	232.498	---	387.933	6,7	23.111	23,1	
	3.418.326	41,1	205.239	---	479.928	14,0	31.152	17,5	10,4
	3.891.272	44,9	274.062	---	494.474	12,7	37.760	13,0	
	47.652	0,6	31.697	---	5.017	10,1	13	2,6	623
	62.738	0,7	57.894	---	---	---	---	---	
	16.905	0,2	15.095	---	---	---	---	---	1,533
	30.352	0,35	45.006	---	---	---	---	---	
	23.521	0,28	62.662	---	---	---	---	---	3,900
	20.369	0,23	112.885	---	---	---	---	---	
	5.333	0,06	2.069	---	---	---	---	---	
	4.750	0,05	3.781	---	---	---	---	---	
	90.062.912	1,03	23.033	---	---	---	---	---	0,4
	122.461.348	1,41	55.640	---	---	---	---	---	
	56.615	0,7	16.675	13,0	---	---	---	---	1,033
	49.892	0,6	54.072	2,3	---	---	---	---	
	100.619	1,2	60.744	---	---	---	---	---	
	64.503	0,74	43.403	---	---	---	---	---	
	67.065	0,8	52.770	---	---	---	---	---	50
	46.738	0,5	32.279	---	---	---	---	---	

## SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L			
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.) I.
BABAÇU RAW OIL	1.965	Tn.	51.815	---	12.017	39.798
	1.967	Tn.	52.204	---	4.198	48.006
MAMONA RAW OIL	1.965	Tn.	165.635	---	140.152	25.483
	1.967	Tn.	79.273	---	74.648	4.625
RAW CORN OIL	1.965	Tn.	3.772	---	---	3.772
	1.967	Tn.	5.184	---	---	5.184
RAW SOY BEAN OIL	1.965	Tn.	20.901	---	---	20.901
	1.967	Tn.	21.657	---	---	21.657
BAR AND POWDER SOAPS	1.965	Tn.	15.485	---	---	15.485
	1.967	Tn.	14.699	---	---	14.699
WATER BASED INK	1.965	Tn.	36.433	---	---	36.433
	1.967	Tn.	69.855	---	---	69.855
OIL BASED INK	1.965	Tn.	31.944	---	---	31.944
	1.967	Tn.	34.820	---	---	34.820
SYNTHETIC INKS	1.965	Tn.	27.435	---	---	27.435
	1.967	Tn.	35.641	---	---	35.641

SECTION 1

Table: 2.3.12 (Cont.)

## PRODUCTIVE LINES IN THE CHEMISTRY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)				
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.) I.	APPARENT CONSUMPTION (4) (C.A.)	t.u. C.A./Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)
BABAÇU RAW OIL	1.965	Tn.	51.815	---	12.017	39.798	39.798	0,47	32.383	---	459	0,9	253	0,8	9,7
	1.967	Tn.	52.204	---	4.198	48.006	48.006	0,25	49.794	---	---	---	---	---	---
MAMONA RAW OIL	1.965	Tn.	165.635	---	140.152	25.483	25.483	0,3	31.845	---	31.726	22,8	11.658	45,0	963
	1.967	Tn.	79.273	---	74.648	4.625	4.625	0,05	76.376	---	22.841	26,8	10.397	21,5	---
RAW CORN OIL	1.965	Tn.	3.772	---	---	3.772	3.772	0,046	2.603	---	---	---	---	---	1.016
	1.967	Tn.	5.184	---	---	5.184	5.184	0,060	5.234	---	---	---	---	---	---
RAW SOY BEAN OIL	1.965	Tn.	20.901	---	---	20.901	20.901	0,25	13.309	---	---	---	---	---	---
	1.967	Tn.	21.657	---	---	21.657	21.657	0,25	16.978	---	---	---	---	---	---
BAR AND POWDER SOAPS	1.965	Tn.	15.485	---	---	15.485	15.485	0,17	5.232	---	---	---	---	---	---
	1.967	Tn.	14.699	---	---	14.699	14.699	0,17	7.333	---	---	---	---	---	---
WATER BASED INK	1.965	Tn.	36.433	---	---	36.433	36.433	0,43	25.068	---	---	---	---	---	---
	1.967	Tn.	69.855	---	---	69.855	69.855	0,81	76.124	---	---	---	---	---	---
OIL BASED INK	1.965	Tn.	31.944	---	---	31.944	31.944	0,36	39.916	---	---	---	---	---	---
	1.967	Tn.	34.820	---	---	34.820	34.820	0,40	67.750	---	---	---	---	---	---
SYNTHETIC INKS	1.965	Tn.	27.435	---	---	27.435	27.435	0,33	46.122	---	---	---	---	---	---
	1.967	Tn.	35.641	---	---	35.641	35.641	0,41	104.141	---	---	---	---	---	---

SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN

PRODUCTIVE LINES	YEAR	UNIT	D R A Z I L					t.u. C.A. Inha.
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)		
WALL-TILES	1.965	m <sup>2</sup>	10.241.035	---	---	10.241.035	0,12	
	1.967	m <sup>2</sup>	14.058.985	---	---	14.058.985	0,15	
LOW TENSION INSULATORS (PORCEL., GLASS)	1.965	1000 u.	20.960	---	---	20.960	0,02	
	1.967	1000u.	18.304	---	---	18.304	0,021	
HIGH TENSION INSULATORS (PORCEL., GLASS)	1.965	1000 u.	1.334	---	---	1.334	0,007	
	1.967	1000 u.	5.952	---	---	5.952	0,007	
VIRGIN LIME	1.965	Tn.	562.835	---	---	562.835	0,02	
	1.967	Tn.	582.103	---	---	582.103	0,02	
HYDRATED LIME	1.965	Tn.	344.106	---	---	344.106	0,023	
	1.967	Tn.	350.488	---	---	350.488	0,04	
WHITE CEMENT	1.965	Tn.	33.163	---	---	33.163	0,40	
	1.967	Tn.	38.321	---	---	38.321	0,44	
SIMPLE PORTLAND CEMENT	1.965	Tn.	5.581.035	42.683	2.739	5.581.035	2,4	
	1.967	Tn.	6.396.312	124.072	14.266	6.396.312	2,7	
FIBRECEMENT SHEETS	1.965	m <sup>2</sup>	6.369.763	---	---	6.369.763	0,0	
	1.967	m <sup>2</sup>	7.023.357	---	---	7.023.357	0,0	
CERAMIC PAVING-TILES	1.965	m <sup>2</sup>	7.830.066	---	---	7.830.066	0,0	
	1.967	m <sup>2</sup>	10.002.768	---	---	10.002.768	0,1	
SIMPLE BRICKS	1.965	m <sup>2</sup>	1.022.262	---	---	1.022.262	0,0	
	1.967	m <sup>2</sup>	1.294.282	---	---	1.294.282	0,0	
CHINA	1.965	Udad.	1.122.402	---	---	1.122.402	0,0	
	1.967	Udad.	1.187.516	---	---	1.187.516	0,0	

## SECTION 1

Table : 2.3.13

## PRODUCTIVE LINES IN NON-METALLIC MINERALS

PRODUCTIVE LINES	YEAR	UNIT	D R A Z I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)				
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)	APPARENT CONSUMPTION (4) (C.A.)	t.u. C.A./ Inhab.	PROD.VALUE 1,000 N Cr (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr (7)	%
WALL-TILES	1.965	m <sup>2</sup>	10.241.035	---	---	10.241.035	10.241.035	0,12	32.371	---	10	0,00.	1	0,00.	6,06
	1.967	m <sup>2</sup>	14.058.985	---	---	14.058.985	14.058.985	0,15	35.276	---	---	---	---	---	---
LOW TENSION INSULATORS (PORCEL., GLASS)	1.965	1000 u.	20.960	---	---	20.960	20.960	0,02	2.405	---	---	---	---	---	---
	1.967	1000u.	18.304	---	---	18.304	18.304	0,021	5.412	---	---	---	---	---	---
HIGH TENSION INSULATORS (PORCEL., GLASS)	1.965	1000 u.	1.334	---	---	1.334	1.334	0,007	2.21	---	---	---	---	---	---
	1.967	1000 u.	5.952	---	---	5.952	5.952	0,007	17.019	---	---	---	---	---	---
VIRGIN LIME	1.965	Tn.	562.835	---	---	562.835	562.835	0,02	10.935	---	10.184	2,2	192	1,1	---
	1.967	Tn.	582.103	---	---	582.103	582.103	0,02	21.224	---	39.677	1,0	302	1,1	---
HYDRATED LIME	1.965	Tn.	344.106	---	---	344.106	344.106	0,023	1.231	---	12.177	3,7	---	---	---
	1.967	Tn.	350.488	---	---	350.488	350.488	0,04	16.513	---	32.071	9,2	---	---	---
WHITE CEMENT	1.965	Tn.	33.163	---	---	33.163	33.163	0,40	2.710	---	---	---	---	---	---
	1.967	Tn.	38.321	---	---	38.321	38.321	0,44	6.194	---	---	---	---	---	---
SIMPLE PORTLAND CEMENT	1.965	Tn.	5.581.035	42.683	2.739	5.581.035	5.581.035	2,4	212.234	0,73	136.040	3,2	1.272	1,4	72,9
	1.967	Tn.	6.396.312	124.072	14.266	6.396.312	6.396.312	2,7	186.135	1,85	104.522	2,7	15.216	1,2	---
FIBRECEMENT SHEETS	1.965	m <sup>2</sup>	6.369.763	---	---	6.369.763	6.369.763	0,0	15.01	---	---	---	---	---	---
	1.967	m <sup>2</sup>	7.023.357	---	---	7.023.357	7.023.357	0,0	29.026	---	106.611	6,6	2.331	1,0	---
CERAMIC PAVING-TILES	1.965	m <sup>2</sup>	7.830.066	---	---	7.830.066	7.830.066	0,0	21.229	---	39.460	0,2	90	0,2	---
	1.967	m <sup>2</sup>	10.002.768	---	---	10.002.768	10.002.768	0,1	34.217	---	27.723	0,2	130	1,1	---
SIMPLE BRICKS	1.965	m <sup>2</sup>	1.022.262	---	---	1.022.262	1.022.262	0,0	1.000	---	04.032	0,2	2.0	0,1	---
	1.967	m <sup>2</sup>	1.294.282	---	---	1.294.282	1.294.282	0,0	1.016	---	4.421	7,30	194	1,1	---
CHINA	1.965	Udad.	1.122.402	---	---	1.122.402	1.122.402	0,0	7.463	---	---	0,00.	---	---	---
	1.967	Udad.	1.187.516	---	---	1.187.516	1.187.516	0,0	15.03	---	250	0,1	---	---	---

## SECTION 2



## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L					t.u. C.A./Inhab.
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)		
FIBRE-CEMENT TILES	1.965	m <sup>2</sup>	158.609	---	---	158.609	0,0	
	1.967	m <sup>2</sup>	2.363.675	---	---	2.363.675	0,0	
CLAY TILES	1.965	1000 u.	361.853	---	---	361.853	0,0	
	1.967	1000 u.	364.676	---	---	364.676	0,0	
CEMENT BRICKS	1.965	1000 u.	7.480	---	---	7.480	0,0	
	1.967	1000 u.	1.432	---	---	1.432	0,0	
FIREPROOF BRICKS	1.965	1000 u.	176.733	---	---	176.733	2,1	
	1.967	1000 u.	83.250	---	---	83.250	0,9	
FLAT GLASS	1.965	m <sup>2</sup>	5.892.265	12.703	724	5.904.244	0,0	
	1.967	m <sup>2</sup>	9.650.207	10.925	4.637	9.656.495	0,1	
SECURITY GLASS	1.965	m <sup>2</sup>	530.399	---	---	530.399	0,0	
	1.967	m <sup>2</sup>	697.655	---	---	697.655	0,0	

## SECTION 1

Table : 2.3.13 (Cont.)

## PRODUCTIVE LINES IN NON-METALLIC MINERALS

I L	APPARENT CONSUMPTION (4) (C.A.)	t.u. C.A./Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)	B A H I A				1967 BRAZIL PRICE UNIT (5/1)
					PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7)	% (7/5)	
	158.609	0,002	806	---	---	---	---	---	5,70
	2.363.675	0,030	13.491	---	---	---	---	---	
	361.853	0,004	12.235	---	11.244	3,1	350	2,85	04,9
	364.676	0,004	23.660	---	11.304	3,1	533	2,3	
	7.480	0,092	1.299	---	343	4,6	25	2	252
	1.432	0,016	361	---	610	42,6	63	17,4	
	176.733	2,17	35.225	---	95	0,1	20	0,1	
	83.250	0,96	43.815	---	---	---	---	---	
	5.904.244	0,072	19.696	0,21	---	---	---	---	3,24
	9.656.495	0,111	37.153	0,11	---	---	---	---	
	530.399	0,006	13.597	---	---	---	---	---	33,7
	697.655	0,008	23.527	---	---	---	---	---	

## SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES

PRODUCTIVE LINES	YEARS	UNIT	B R A Z I L					t.u. C.A./ Inhab.
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)		
STEEL BARS	1.965	Tn.	1.842.246	---	---	1.842.246	22,0	
	1.967	Tn.	2.585.900	---	---	2.585.900	30,0	
ALUMINIUM IN BARS AND LAMINATED	1.965	Tn.	41.588	22.227	697	63.062	0,1	
	1.967	Tn.	55.137	29.101	154	84.092	0,1	
ANTIMONY PRIMARY SHAPES	1.965	Tn.	1	72	---	73	0,7	
	1.967	Tn.	125	70	---	196	0,4	
BARBED WIRES	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	19.774	39.246	---	59.020	1,0	
GALVANIZED WIRES	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	37.267	---	---	37.267	1,1	
FLAT WIRES	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	70.820	---	---	70.820	1,1	
PATENTED WIRES	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	17.937	---	---	17.937	1,1	
OVAL WIRES	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	1.143	---	---	1.143	0,1	
BRONZE	1.965	Tn.	4.058	---	---	4.058	0,1	
	1.967	Tn.	4.460	---	---	4.460	0,1	
COPPER IN PRIMARY SHAPES	1.965	Tn.	2.823	---	---	2.823	0,1	
	1.967	Tn.	6.433	---	---	6.433	0,1	
STEEL SLABS	1.965	Tn.	374.653	17.554	---	392.211	4,8	
	1.967	Tn.	507.858	13.296	148.173	362.979	4,8	

## SECTION 1

Table : 2.3.14

## PRODUCTIVE LINES IN THE METALLURGY SECTOR

PRODUCTIVE LINES	YEARS	UNIT	B A H I A				1967 BRAZIL PRICE UNIT (5/1)
			PRODUCTION (6)	% (2/4)	PROD. VALUE 1,000 N Cr (7)	% (7/5)	
STEEL BARS	1.965	Tn.	---	---	---	0,1	140,2
	1.967	Tn.	2.561	0,1	---	---	---
ALUMINIUM IN BARS AND LAMINATED	1.965	Tn.	---	---	---	---	39,4
	1.967	Tn.	---	---	---	---	---
ANTIMONY PRIMARY SHAPES	1.965	Tn.	---	---	---	---	2.267,1
	1.967	Tn.	---	---	---	---	---
BARBED WIRES	1.965	Tn.	---	---	---	---	50,1
	1.967	Tn.	---	---	---	---	---
GALVANIZED WIRES	1.965	Tn.	---	---	---	---	34,0
	1.967	Tn.	---	---	---	---	---
FLAT WIRES	1.965	Tn.	---	---	---	---	47,1
	1.967	Tn.	---	---	---	---	---
PATENTED WIRES	1.965	Tn.	---	---	---	---	227,8
	1.967	Tn.	---	---	---	---	---
OVAL WIRES	1.965	Tn.	---	---	---	---	---
	1.967	Tn.	---	---	---	---	---
BRONZE	1.965	Tn.	---	---	---	---	4.578,0
	1.967	Tn.	---	---	---	---	---
COPPER IN PRIMARY SHAPES	1.965	Tn.	---	---	---	---	1.636,5
	1.967	Tn.	---	---	---	---	---
STEEL SLABS	1.965	Tn.	---	---	---	---	275
	1.967	Tn.	---	---	---	---	---

## SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN THE

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L					t.u. C.A./ Inhab.
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)		
SHEETS AND COIL IN COLD AND HEAT	1.965	Tn.	437.314	7.497	62.311	379.998	4,6	
	1.967	Tn.	551.791	7.108	94.226	464.473	5,5	
GALVANIZED SHEET	1.965	Tn.	38.204	---	---	38.204	0,4	
	1.967	Tn.	44.716	---	---	44.716	0,5	
LEAD	1.965	Tn.	15.448	2.171	---	17.619	0,2	
	1.967	Tn.	19.667	6.713	---	26.180	0,3	
TIN	1.965	Tn.	2.606	---	---	1.943	0,02	
	1.967	Tn.	1.943	---	---	2.606	0,03	
CAST-IRON	1.965	Tn.	1.548.923	---	---	1.548.923	18,7	
BRASS	1.965	Tn.	2.866	---	---	2.866	0,03	
	1.967	Tn.	10.680	---	---	10.680	0,12	
GOLD	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	---	---	---	---	---	
SILVER	1.965	Tn.	1	23	---	24	---	
	1.967	Tn.	1	28	---	29	---	
SHAPED OVER 80mm	1.965	Tn.	116.881	---	---	116.881	1,4	
	1.967	Tn.	89.979	---	---	97.479	1,13	
SHAPED BELOW 80 mm	1.965	Tn.	42.409	---	---	42.409	0,5	
	1.967	Tn.	108.891	---	---	108.891	1,2	
MIDDLE PRODUCTS FROM SPECIAL STEEL	1.965	Tn.	---	10.337	---	10.337	0,12	
	1.967	Tn.	156.509	1.912	54.327	104.094	1,1	

## SECTION 1

Table : 2.3.14 (Cont.)

## PRODUCTIVE LINES IN THE METALLURGY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)
			APPARENT CONSUMPTION (4) (C.A.)	t.u. C.A./ Inhab.	PROD.VALUE 1,000 N Cr (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr (7)	% (7/5)	
SHEETS AND COIL IN COLD AND HEAT	1.965	Tn.	379.998	4,6	118.077	1,4	---	---	---	---	344,5
	1.967	Tn.	464.473	5,5	189.996	1,6	---	---	---	---	
GALVANIZED SHEET	1.965	Tn.	38.204	0,4	16.755	---	---	---	---	---	648,2
	1.967	Tn.	44.716	0,5	21.986	---	---	---	---	---	
LEAD	1.965	Tn.	17.619	0,2	13.057	12,3	5.115	31,1	4.245	32,5	1.163,4
	1.967	Tn.	26.180	0,3	22.881	24,9	12.497	63,5	13.086	57,2	
TIN	1.965	Tn.	1.943	0,02	16.625	---	---	---	---	---	11.853,8
	1.967	Tn.	2.606	0,03	23.032	---	---	---	---	---	
CAST-IRON	1.965	Tn.	1.548.923	18,7	106.237	---	---	---	---	---	68
BRASS	1.965	Tn.	2.866	0,03	15.438	---	---	---	---	---	722,3
	1.967	Tn.	10.680	0,12	7.714	---	---	---	---	---	
GOLD	1.965	Tn.	---	---	9.592	---	---	---	---	---	
	1.967	Tn.	---	---	13.368	---	---	---	---	---	
SILVER	1.965	Tn.	24	---	97	100	---	---	---	---	164
	1.967	Tn.	29	---	164	100	---	---	---	---	
SHAPED OVER 80mm	1.965	Tn.	116.881	1,4	30.077	---	---	---	---	---	377,9
	1.967	Tn.	97.479	1,13	34.004	---	---	---	---	---	
SHAPED BELOW 80 mm	1.965	Tn.	42.409	0,5	9.669	---	---	---	---	---	388,6
	1.967	Tn.	108.891	1,2	42.315	---	---	---	---	---	
MIDDLE PRODUCTS FROM SPECIAL STEEL	1.965	Tn.	10.337	0,12	---	100	---	---	---	---	239,1
	1.967	Tn.	104.094	1,1	37.413	1,8	---	---	---	---	

## SECTION 2

BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN THE

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L					t.u. C.A./Inhab
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)		
SINTER	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	1.598.432	---	---	1.598.432	18,46	
STRIPS AND TAPES 11 TO 30 mm	1.965	Tn.	42.293	4.246	---	46.539	0,6	
	1.967	Tn.	56.649	7.822	---	64.471	0,7	
RAILS AND ACCESSORIES FOR RAILWAYS	1.965	Tn.	97.616	41.667	69.187	70.092	0,8	
	1.967	Tn.	102.415	63.982	104.482	66.914	0,8	
STEEL PIPES WITH SEAM	1.965	Tn.	---	58	51	---	0,00	
	1.967	Tn.	74.807	123	102	74.784	0,7	
STEEL PIPES WITHOUT SEAM	1.965	Tn.	62.235	264	1.092	61.407	0,7	
	1.967	Tn.	85.182	1.020	122	90.080	10,4	
CAST-IRON FOR MELTING	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	278.354	---	---	278.354	3,21	
CAST-IRON FOR STEELING	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	1.914.555	---	---	1.914.555	22,	
CAST-IRON FOR OTHER USES	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	248.694	---	---	248.694	2,9	
MELTINGS FROM SPECIAL STEEL	1.965	Tn.	22.884	---	---	22.884	0,27	
	1.967	Tn.	---	---	---	---	---	
FERROSILICON	1.965	Tn.	9.475	45	---	9.520	0,11	
	1.967	Tn.	15.568	379	---	15.927	0,18	
FERROMANGANESE	1.965	Tn.	26.536	---	7.260	19.276	0,23	
	1.967	Tn.	30.849	---	310	31.159	0,35	

SECTION 1

Table : 2.3.14 (Cont.)

PRODUCTIVE LINES IN THE METALLURGY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B A H I A				1967 BRAZIL PRICE UNIT (5/1)
			PRODUCTION (6)	% (6/1)	PROD.VALUE 1,000 N Cr (7)	% (7/5)	
SINTER	1.965	Tn.	---	---	---	---	20,9
	1.967	Tn.	1.598.432	---	---	---	---
STRIPS AND TAPES 11 TO 30 mm	1.965	Tn.	46.539	0,6	17.242	9,1	534,5
	1.967	Tn.	64.471	0,7	37.075	1,1	---
RAILS AND ACCESSORIES FOR RAILWAYS	1.965	Tn.	70.092	0,8	24.649	29,4	370
	1.967	Tn.	66.914	0,8	37.852	100,2	---
STEEL PIPES WITH SEAM	1.965	Tn.	457	0,00	---	12,7	603,4
	1.967	Tn.	74.784	0,00	19.627	0,16	---
STEEL PIPES WITHOUT SEAM	1.965	Tn.	61.407	0,7	41.769	0,4	1.001,7
	1.967	Tn.	90.080	10,4	36.011	5,6	---
CAST-IRON FOR MELTING	1.965	Tn.	---	---	---	---	110,0
	1.967	Tn.	278.354	3,21	30.577	---	---
CAST-IRON FOR STEELING	1.965	Tn.	---	---	---	---	91
	1.967	Tn.	1.914.555	22,	181.479	---	---
CAST-IRON FOR OTHER USES	1.965	Tn.	---	---	---	---	102
	1.967	Tn.	248.694	2,9	25.841	---	---
MELTINGS FROM SPECIAL STEEL	1.965	Tn.	22.884	0,27	19.272	---	342,2
	1.967	Tn.	---	---	---	---	---
FERROSILICON	1.965	Tn.	9.520	0,11	3.573	0,5	51,2
	1.967	Tn.	15.927	0,18	8.022	2,3	336,2
FERROMANGANESE	1.965	Tn.	19.276	0,23	7.672	---	442,2
	1.967	Tn.	31.159	0,35	13.643	---	---

SECTION 2

## BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN T

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L					t.u. P.P. C.A./1. Inhab.
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A.)		
FERROCHROME	1.965	Tn.	3.045	247	---	3.294	0,04	
	1.967	Tn.	1.662	1.988	---	3.650	0,04	
FERROSILICON MAGNESIUM	1.965	Tn.	12.382	---	---	13.382	0,16	
	1.967		---	---	---	---	---	
FERROTUNGSTEN	1.965	Tn.	19.196	---	---	19.196	0,23	
	1.967	Tn.	200	---	---	200	0,002	
NON-ELECTRICAL KITCHEN RANGES	1.965	Tn.	598.951	---	---	598.951	7,36	
	1.967	Tn.	830.222	---	---	830.222	9,58	
ELECTROLYTIC BRASS	1.965	Tn.	143.515	---	---	143.515	1,7	
	1.967	Tn.	196.032	---	---	196.032	2,3	
SMELTED IRON PIPES	1.965	Tn.	84.205	---	4.564	79.641	0,92	
	1.967	Tn.	93.015	---	7.898	85.117	1	
ACCESSORIES FOR SMELTED IRON PIPES	1.965	Tn.	19.866	175	105	19.936	0,2	
	1.967	Tn.	23.824	294	317	23.801	0,3	
IRON BARS	1.965	Tn.	---	10.396	5.007	---	---	
	1.967	Tn.	879.961	20.083	3.088	896.956	10,3	
BARS OVER 80 mm	1.965		116.115	---	---	---	---	
	1.967		---	---	---	---	---	
BARS UP TO 80 mm	1.965	Tn.	138.785	---	---	---	---	
	1.967		---	---	---	---	---	
CARBON STEEL BARS UP TO 80 mm	1.965	Tn.	---	---	---	---	---	
	1.967	Tn.	118.175	---	---	118.175	1,36	

SECTION 1

Table: 2.3.14 (Cont.)

## PRODUCTIVE LINES IN THE METALLURGY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B A H I A				1967 BRAZIL PRICE UNIT 5/1			
			APPARENT CONSUMPTION (4) (C.A.)	t.u. C.A./Inhab.	PROD. VALUE 1,000 N Cr (5)	% (2/4)		PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 N Cr (7/5)
FERROCHROME	1.965	Tn.	3.294	0,04	1.566	7,5	---	---	---	843
	1.967	Tn.	3.650	0,04	1.401	34,5	1.317	79,2	1.185	85,0
FERROSILICON MAGNESIUM	1.965	Tn.	13.382	0,16	3.102	---	---	---	---	250,5
	1.967		---	---	---	---	---	---	---	---
FERROTUNGSTEN	1.965	Tn.	19.196	0,23	3.277	---	---	---	---	205
	1.967	Tn.	200	0,002	41	---	---	---	---	---
NON-ELECTRICAL KITCHEN RANGES	1.965	Tn.	598.951	7,36	44.933	---	---	---	---	95,6
	1.967	Tn.	830.222	9,58	79.378	---	---	---	---	---
ELECTROLYTIC BRASS	1.965	Tn.	143.515	1,7	59.747	---	---	---	---	625,6
	1.967	Tn.	196.032	2,3	122.647	---	---	---	---	---
SMELTED IRON PIPES	1.965	Tn.	79.641	0,92	20.152	---	---	---	---	487
	1.967	Tn.	85.117	1	45.295	---	---	---	---	---
ACCESSORIES FOR SMELTED IRON PIPES	1.965	Tn.	19.936	0,2	11.687	0,9	---	---	---	1.267,6
	1.967	Tn.	23.801	0,3	30.200	1,2	---	---	---	---
IRON BARS	1.965	Tn.	---	---	---	---	---	---	---	426,4
	1.967	Tn.	896.956	10,3	375.256	2,2	3.559	0,40	1.595	0,42
BARS OVER 80 mm	1.965		---	---	32.128	---	---	---	---	274,6
	1.967		---	---	---	---	---	---	---	---
BARS UP TO 80 mm	1.965	Tn.	---	---	68.980	---	---	---	---	497
	1.967		---	---	---	---	---	---	---	---
CARBON STEEL BARS UP TO 80 mm	1.965	Tn.	---	---	---	---	---	---	---	405
	1.967	Tn.	118.175	1,36	47.926	---	---	---	---	---

SECTION 2

BASIC DATA FOR PRESELECTION OF PRODUCTIVE LINES IN THE

PRODUCTIVE LINES IN THE METALLURGY SECTOR

PRODUCTIVE LINES	YEAR	UNIT	B R A Z I L						I L				B A H I A				1967 BRAZIL PRICE UNIT (5/1)
			PRODUCTION	IMPORTS	EXPORTS	APPARENT CONSUMPTION (4) (C.A./)	t.u. C.A./ Inhab	PRC. 1,000	APPARENT CONSUMPTION (4) (C.A./)	t.u. C.A./ Inhab	PROD. VALUE 1,000 M Cr (5)	% (2/4)	PRODUCTION (6)	% (6/1)	PROD. VALUE 1,000 M Cr (7)	% (7/5)	
REINFORCED BARS	1.965	Tn.	169.244	---	---	169.244	2,081		169.244	2,081	52,507	---	1,987	2,4	1,185	2	342,8
	1.967	Tn.	28.262	---	---	28.262	0.31		28.262	0.31	9,689	---	---	---	---	---	
TWISTED BARS FOR CONCRETE	1.965	Tn.	64.296	---	---	64.296	0,79		64.296	0,79	19,665	---	---	---	---	---	373,3
	1.967	Tn.	112.170	---	---	112.170	1.21		112.170	1.21	41,871	---	---	---	---	---	
FLAT BARS FOR CONCRETE	1.965	Tn.	---	---	---	---	---		---	---	---	---	---	---	---	---	369,0
	1.967	Tn.	192.930	---	---	71.198	---		71.198	---	71.198	---	1,559	2	1,595	2,2	
WIRES	1.965	Tn.	39.125	---	---	39.125	0,48		39.125	0,48	---	---	---	---	---	---	344,0
	1.967	Tn.	230.850	2.849	---	230.850	2,67		230.850	2,67	79,419	1,2	---	---	---	---	

SECTION 1

SECTION 2

A-4 STATISTICS OF DETAIL FROM INVESTIGATED  
AREAS

(Source: I.B.C.E.)

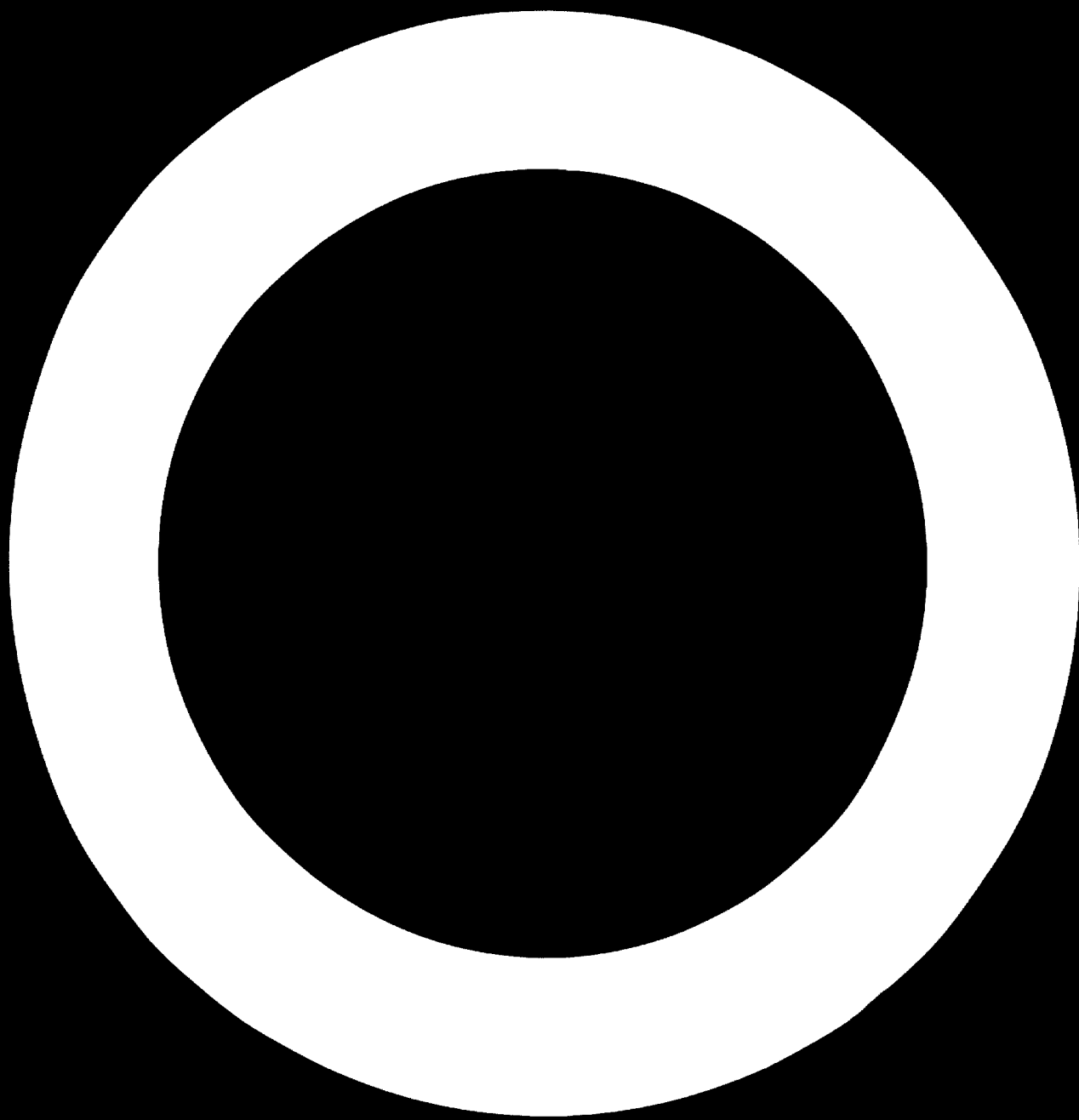




Table: 2.5.1.

SECTOR: Non-metallic minerals (Resume)

CONCEPTS	NORTHEAST			BAHIA		
	1965	1966	1967	1965	1966	1967
PEOPLE EMPLOYED BY FIRMS OF:						
5 to 19 workers	---	3,028	2,873	---	743	795
20 to 99 "	---	4,178	4,303	---	1,191	1,253
100 to 499 "	---	3,043	2,635	---	1,031	1,152
500 Or more	---	---	2,480	---	---	---
Total of people employed in this Sector	---	11,663	12,351	---	2,965	3,200
PRODUCTION VALUE (N. Cr.)						
Total: (Prices 1967)	---	68,093	112,951	---	31,910	35,087
Per employed person	12.5	5.8	9.1	---	10.8	11.0

SECTOR: Non-Metallic Minerals  
 LINE: Sanitary Porcelaine

CONCEPTS	UNIT.	BRAZIL	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity): Porcelaine Bidets Porcelaine Basins Porcelaine Bowl	each " " "	171-932 269-994 745-590	1-370 1-582	2-609 40-578	874 10-584 62-295	---	---	---
PRODUCTION VALUE:	1.000MCR. " " "	3-118 2-488 10-025	---	16 491	9 78 672	---	---	---
NUM. OF FIRMS:	each " " "	5 8 6	---	2 1	1 2 1	---	---	---
Bidets Factories	"							
Basins Factories	"							
Bowls Factories	"							

Table: 2.5.1.2.

SECTOR: Non-metallic minerals

LINE: Wall-tiles

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity)								
Wall-tiles	1.000 m <sup>2</sup>	14.059	170	168	1.895	0.040	0.654	---
VALUE OF PRODUCTION OF:								
Wall-tiles	1.000 EC\$.	85.876	1.071	1.198	11.928	1	28	---
NUM. OF FIRMS								
Wall-tiles Factories	Each	17	1	1	2	1	1	--- (1)

TABLE: 2.5.1.3.

SECTOR: Non-Metallic Minerals

LINE: Insulators

CONCEPTS	UNIT	NORTHEAST			BAHIA		
		1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity):							
Porcelaine or Glass insulators high tension	1.000	---	---	---	---	---	---
Porcelaine or Glass insulators low tension	1.000	---	---	---	---	---	---
VALUE OF PRODUCTION:							
High tension insulators	1.000 MCr.	---	---	---	---	---	---
Low tension insulators	" "	---	---	---	---	---	---
NUM. of FIRMS:-							
FABR.:							
High tension insulators		11	---	---	---	---	---
Low tension insulators		10	---	---	---	---	---

Table: 2.5.1.4.

SECTOR: Non-metallic minerals  
 LINE: Flat Glass

CONCEPTS	UNIT	BRAZIL			NORTHEAST			BAHIA						
		1.967	1.965	1.966	1.967	1.965	1.966	1.967	1.965	1.966	1.967			
OUTPUTS (Quantity)														
Flat glass	1.000 m <sup>2</sup>	9.650,2	---	---	---	---	---	---	---	---	---	---	---	---
VALUE OF PRODUCTION OF:														
Flat glass	1.000 MCR.	37.153	---	---	---	---	---	---	---	---	---	---	---	---
NUM. OF FIRMS:														
Flat glass factories	Each	7	---	---	---	---	---	---	---	---	---	---	---	---

Table: 2.5.2.

SECTOR: TEXTILE (Resume)

CONCEPTS	BRAZIL 1.967	NORTHEAST			BAHIA		
		1.965	1.966	1.967	1.965	1.966	1.967
PEOPLE EMPLOYED BY FIRMS OF:							
5 to 19 workers	5.853	1.866	1.681	---	665	573	
20 to 99 "	37.808	4.648	4.015	---	551	567	
100 to 499 "	105.346	11.349	8.956	---	1.654	1.754	
500 or more	140.876	23.214	18.701	---	1.782	1.741	
Total of people employed in this Sector	309.883	41.077	33.293	---	6.652	6.635	
PRODUCTION VALUE (N.Gr.)							
Total: (Prices 1967)	3.797.956	479.569	679.569	---	37.664	36.863	
Per employed person	18,0	11,2	14,6	---	8,1	7,5	

SECTOR: TEXTILE  
 LINE: Artificial Tissues

TABLE: 2.5.2.1.

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity): Artificial Linen Cloths	1.000 ■	158.687	---	7,0	---	---	---	---
VALUE OF PRODUCTION OF: Artificial linen cloths	MCr. 1.000	445.727	---	19	---	---	---	---
NUM. OF FIRMS: Fac. Artificial Linen Cloths Factories	piece	269	---	1	---	---	---	---

SECTOR: TEXTILE

LINE: Leaf Fibres and Several Products of Vegetal Origin.

TABLE: 2.5.2.2.

CONCEPTS	UNIT	NORTHEAST			BAHIA		
		1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity)							
Jute cloths'	1.000 m	10.611,5	13.482,0	12.670	2.326	2.191	2.461
Wool cloths'	"	---	---	---	---	---	---
Cotton cloths'	Million m	200,5	195,3	183	18	17	19
VALUE OF PRODUCTION OF:							
Jute cloths'	1.000 MCR	4.407	7.392	6.211	1.117	1.766	1.785
Wool cloths'	"	---	---	---	---	---	---
Cotton cloths'	Million MCRs	76.303	111.742	129	6.964	9.855	14
NUM. OF FIRMS:-							
Jute cloths factories	piece	3	4	4	1	1	1
Wool cloths factories		---	---	---	---	---	---
Cotton cloths factories		33	38	36	5	6	5



SECTOR: TEXTILE  
 LINE: Knitted Fabrics

TABLE: 2.5.2.3.

CONCEPTS	UNIT	BAHIA 1.967	NORTHEAST				BAHIA			
			1.965	1.966	1.967	1.965	1.966	1.967		
OUTPUTS (quantity):										
Knit blouse	1.000	6.847,6	0,6	1,1	1,2	0,2	0,5	0,8		
Knit shirts	"	16.642,9	---	---	---	---	---	---		
Children socks	"	33.001,5	29,4	85,9	256,1	---	---	---		
Men socks	"	26.421,1	35,9	153,0	227,6	---	---	---		
Ladiesware	"	28.959,9	---	---	---	---	---	---		
Bath-suit (maillot)	"	952,6	---	---	---	---	---	---		
Knit dress	"	1.399,6	0,2	0,4	0,9	---	---	0,1		
VALUE OF PRODUCTION OF:										
Knit blouse	1.000 NCr\$	62.875	19	28	22	1	3	9		
Knit shirts	"	22.699	---	---	---	---	---	---		
Children socks	"	9.417	8	30	102	---	---	---		
Men socks	"	28.661	14	77	125	---	---	---		
Ladiesware	"	32.552	---	---	---	---	---	---		
Bath-suit (maillot)	"	13.066	---	---	---	---	---	---		
Knit dress	"	22.992	6	12	28	---	---	2		
NUM. OF FIRMS- FAB:										
Knit blouse	each	116	1	1	1	1	1	1		
Knit shirts	"	31	---	---	---	---	---	---		
Children socks	"	29	1	1	1	---	---	---		
Men socks	"	44	1	1	1	---	---	---		
Ladiesware	"	44	---	---	---	---	---	---		
Bath-suit (maillot)	"	23	---	---	---	---	---	---		
Knit dress	"	91	1	1	1	---	---	1		

Table: 2.5.3.

SECTOR: Food Products (Resume)

CONCEPTS	BRAZIL 1.967	NORTHEAST			BAHIA		
		1.965	1.966	1.967	1.965	1.966	1.967
PEOPLE EMPLOYED BY FIRMS OF:							
5 to 19 workers	36.318	---	10.404	10.562	---	1.950	1.796
20 to 99 "	51.538	---	6.726	6.637	---	898	1.060
100 to 499 "	108.871	---	19.128	23.490	---	167	537
500 or more	37.776	---	12.876	5.579	---	530	---
Total of people employed in this Sector	206.691	---	48.537	46.268	---	3.545	3.393
VALUE OF PRODUCTION (NG's)							
Total: (Prices 1967)	7.570.872	---	710.905	764.993	---	45.921	47.198
By employed person	33.4	---	14.6	16.5	---	13.0	14.0

Table: 2.5.3.1.

SECTOR: Food products  
 LINE: Meats

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			PARIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (Quantity) Bovine meat (frozen)	1.000 Ton	376,1	1,6	1,0	0,8	3,6	2,0	2,3
PRODUCTION VALDE IN: Bovine meat	Million. MEa	667,5	1,3	1,6	1,6	6,1	2,2	3,1
NUM. OF FIRMS Fac. bovine meat	Piece	101	1	1	1	3	2	2

Table: 2.5.3.2.

SECTOR: Food products  
 LINES: Fish - canning

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (Quantity)								
Fish - canning	Tn.	25.649	7	6	14	41	36	---
PRODUCTION VALUE IN:								
Fish - canning	1.000 MCr.	22.975	8	8	46	12	13	---
NUM. OF FIRMS								
Fac. Fish - canning	Piece	31	1	1	1	1	1	---

SECTOR: FOOD PRODUCTS

LINE: Maize Preparations, Mixed Feeds.

TABLE: 2.5.3.3.

CONCEPTS	UNIT	NORTHEAST				BAHIA		
		BRAZIL 1.967	1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity)								
Fowls mixed food	1.000 Th.	671,6	---	---	50,3	1,9	4,5	3,9
Bovines mixed food	" "	191,8	---	---	18,1	---	0,04	---
Maize flour	" "	71,4	---	---	13,5	1,5	6,0	2,2
Refined maize oil	" "	9,3	---	---	---	---	---	---
PRODUCTION VALUE IN:								
Fowls mixed food	Million R\$.	164,1	---	---	13,0	0,4	0,3	1,3
Bovines mixed food	" "	29,5	---	---	2,8	---	0,04	---
Maize flour	" "	17,3	---	---	4,1	0,6	1,7	0,7
Refined maize oil	" "	18,8	---	---	---	---	---	---
NUM. OF FIRMS - FAB.								
Fowls mixed food	Unit	80	---	---	6	3	4	4
Bovines mixed food	" "	65	---	---	8	---	1	---
Maize flour	" "	165	---	---	76	12	12	11
Refined maize oil	" "	10	---	---	---	---	---	---

SECTOR: FOOD PRODUCTS  
 LINE: Fruit and Greens Canning.

TABLE: 2.5.3.4.

CONCEPTS	UNIT	BRAZIL				NORTHEAST				BAHIA							
		1.967				1.965				1.966				1.967			
		1.967				1.965				1.966				1.967			
OUTPUTS (quantity):																	
Sweet of fruit	1.000 Tm.	61,5	11,8	11,4	16,3	0,4	0,5	0,6									
Tomato extract	"	42,6	4,1	5,1	8,2	---	---	---									
Fruit-jams	"	18,8	0,9	2,1	2,3	---	---	---									
Frosted fruit	"	2,8	0,04	0,09	0,5	---	---	---									
Canned greens	"	19,3	---	---	---	---	---	---									
PRODUCTION VALUE IN:																	
Sweet of fruit	Million R\$	42,4	5,7	6,6	9,9	0,1	0,2	0,4									
Tomato extract	"	55,2	4,1	5,6	8,1	---	---	---									
Fruit-jams	"	22,5	0,7	2	2,2	---	---	---									
Frosted fruit	"	5,1	0,04	0,1	0,2	---	---	---									
Canned greens	"	18,1	---	---	---	---	---	---									
NUM. OF FIRMS - FAB.:																	
Sweet of fruit	unit	108	30	37	30	4	4	4									
Tomato extract	"	16	3	3	3	---	---	---									
Fruit-jams	"	50	7	6	7	---	---	---									
Frosted fruit	"	14	1	1	2	---	---	---									
Canned greens	"	36	---	---	---	---	---	---									

SECTOR: FOOD PRODUCTS

LINE: Milky Goods.

TABLE: 2.5.3.5.

CONCEPTS	UNIT	BRAZIL			NORTHEAST			BAHIA		
		1.967	1.965	1.966	1.967	1.965	1.966	1.967		
OUTPUTS (quantity):										
Condensed milk	1.000 Tm.	16	---	---	---	---	---	---	---	---
Powder milk	"	82	0,6	2	1	---	---	---	---	---
Butter	"	36	0,5	0,5	0,5	1	1	---	---	---
Margarine	"	36	3	3	6	---	---	---	---	---
Cheese	"	43	0,8	1	1	0,08	0,1	---	---	0,07
PRODUCTION VALUE IN:										
Condensed milk	1.000 NCR	38.673	---	---	---	---	---	---	---	---
Powder milk	"	277.931	1.039	6.130	3.728	---	---	---	---	---
Butter	"	96.537	3.079	1.357	1.584	1.916	2.666	---	---	2.603
Margarine	"	66.785	2.397	3.894	7.979	---	---	---	---	---
Cheese	"	98.241	1.441	2.427	3.443	137	288	---	---	165
NUM. OF FIRMS - FAB.:										
Condensed milk	piece	5	---	---	---	---	---	---	---	---
Powder milk	"	24	1	1	1	---	---	---	---	---
Butter	"	299	26	28	18	14	14	---	---	8
Margarine	"	9	1	1	2	---	---	---	---	---
Cheese	"	214	24	24	17	6	6	---	---	5

Table: 2.5.4.

SECTOR: Furniture (Resume)

CONCEPTS	BRAZIL 1.967	NORTHEAST			BAHIA		
		1.965	1.966	1.967	1.965	1.966	1.967
PEOPLE EMPLOYED BY FIRMS OF:							
5 to 19 workers	13.908	---	979	713	---	339	309
20 to 99 "	25.425	---	1.267	706	---	373	462
100 to 499 "	6.873	---	171	373	---	131	---
500 or more	4.395	---	---	---	---	---	---
Total employed people in this Sector	54.601	---	2.417	1.792	---	843	771
PRODUCTION VALUE							
Total: (Prices 1967)	563.833	---	17.013	12.979	---	6.206	5.769
By employed person	10.3	---	7.03	7.2	---	7.4	7.5



SECTOR: FURNITURE

TABLE: 2.5.4.1.

LINE: Wooden Furnitu re.

CONCEPTS	UNIT	BRAZIL		NORTHEAST			BAHIA		
		1.967		1.965	1.966	1.967	1.965	1.966	1.967
<b>OUTPUTS (quantity):</b>									
Wooden chairs	1.000 P.	3.537,0		68,5	63,1	85,5	19,4	20,3	33,1
Beds	"	1.280,9		11,7	56,3	54,9	14,7	18,3	21,0
Wardrobes	"	303,7		8,7	11,2	11,3	2,1	2,5	4,4
Tables	"	588,0		10,7	12,6	18,3	5,8	6,3	12,1
<b>PRODUCTION VALUE IN:</b>									
Wooden chairs	1.000 MCr.	32.428		577	818	1.580	155	197	683
Beds	"	33.683		1.149	1.730	2.885	382	562	953
Wardrobes	"	35.406		741	1.423	1.703	163	222	395
Tables	"	12.860		482	760	1.137	160	163	362
<b>NUM. OF FIRMS - FAB.:</b>									
Wooden chairs	piece	1.101		101	103	100	74	75	83
Beds		1.174		114	121	107	86	85	91
Wardrobes		1.016		105	114	104	73	73	78
Tables		84		90	95	96	77	77	85

Table: 2.5.5.

SECTOR: Perfumery (Resume)

CONCEPTS	BRAZIL 1.967	NORTHEAST			BARIA		
		1.965	1.966	1.967	1.965	1.966	1.967
		PEOPLE EMPLOYED BY FIRMS OF:					
5 to 19 workers	2.070	430	432	---	56	59	
20 to 99 "	4.085	448	409	---	195	837	
100 to 499 "	6.339	---	---	---	---	---	
500 or more	2.996	---	---	---	---	---	
Total people employed in this sector	15.590	887	841	---	251	296	
PRODUCTION VALUE (N. Cr.)							
Total: (Prices 1967)	599.799	31.418	28.088	---	6.272	6.068	
By employed person	38,5	35,4	33,6	---	25,0	20,5	

SECTOR: PERFUMERY  
 LINE: Detergents and Soaps.

TABLE: 2.5.5.1.

A-127

CONCEPTS	UNIT	NORTHEAST				BAHIA			
		BRAZIL		1.966		1.965		1.966	1.967
		1.967	1.965	1.966	1.967	1.965	1.966	1.967	
OUTPUTS (quantity):									
Domestic Detergent	1,000 Tn.	52,0	---	---	---	---	---	---	
Industrial "	"	11,0	---	---	---	---	---	---	
Domestic Soap	"	283,0	38,8	45,2	46,0	6,6	9,0	11,1	
Industrial "	"	6,2	0,2	0,3	---	0,006	0,008	0,001	
PRODUCTION VALUE IN:									
Domestic Detergent	1,000 MCr.	72.677	---	---	---	---	---	---	
Industrial "	"	10.022	---	---	---	---	---	---	
Domestic Soap	"	194.837	17.780	25.187	29.101	2.798	4.633	5.915	
Industrial "	"	5.658	60	191	---	3	5	4	
NUM. OF FIRMS - FAB.:									
Domestic Detergent	unit	36	---	---	---	---	---	---	
Industrial "	"	21	---	---	---	---	---	---	
Domestic Soap	"	319	91	91	84	56	57	50	
Industrial "	"	20	1	2	---	2	2	1	

SECTOR: Wood Furniture

Table: 2.5.6.

CONCEPTS	BRAZIL 1967	NO TREAST			BAHIA		
		1965	1966	1967	1965	1966	1967
PEOPLE EMPLOYED BY FIRMS OF:							
5 to 19 workers	21.107	---	1.470	1.414	---	404	367
20 to 99 "	37.211	---	346	481	---	471	607
100 to 490 "	12.201	---	---	---	---	225	322
500 or more	3.538	---	---	---	---	---	---
Total people employed in this Sector	74.057	---	1.816	1.895	---	1.200	1.296
PRODUCTION VALUE (IN R\$)	669.970	---	12.151	11.398	---	8.114	8.205
Total: (Prices 1967)	9,0	---	6,7	6,0	---	6,8	6,3
By employed person							

ANEXO

SECTOR: WOOD  
LINE: Stock.

TABLE: 2.5.6.1.

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity):								
Gross timbers	m <sup>3</sup>	51.061	---	---	---	209	550	700
Pressed veneer	1.000 m <sup>2</sup>	21.513,7	---	---	---	---	---	---
Compensated wood	" "	29.006,5	---	---	---	626,7	205,8	330,0
PRODUCTION VALUE IN:								
Gross timbers	1.000 MCF.	2.678	---	---	---	9	33	40
Pressed veneer	" "	32.950	---	---	---	---	---	---
Compensated wood	" "	67.604	---	---	---	167	372	817
NUM. OF FIRMS - FAB:								
Gross timbers	pieces	61	---	---	---	2	2	2
Pressed veneer	" "	6	---	---	---	---	---	---
Compensated wood	" "	95	---	---	---	1	1	1

....

SECTOR: WOOD

LINE: STOCK

TABLE 1. (Continued)

.....

CONCEPT	UNIT	BRAZIL			NORTHEAST			BAHIA			
		1.967	1.965	1.966	1.967	1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity):											
Wood in foils	1,000 m <sup>2</sup>	220,6	0,3	0,4	---	---	---	---	---	---	5,5
Laminated timber	"	13.956,4	1,2	---	---	---	---	---	---	---	69,2
Sawed or deroughed timber	"	5.745,3	112,8	124,4	94,5	31,6	34,7	39,4			
Floor locus	"	5.811,2	164,1	100,1	105,8	78,3	70,2	240,8			
PRODUCTION VALUE IN:											
Wood in foils	1,000 MCR	1.323	2	4	---	---	---	---	---	---	125
Laminated timber	"	34.245	12	---	---	---	---	---	---	---	42
Sawed or deroughed timber	"	317.545	4.000	6.379	8.017	3.922	4.469	4.954			
Floor locus	"	21.589	323	392	480	163	214	1.035			
NUM. OF FIRMS -											
FAB:		9	1	1	---	---	---	---	---	---	1
Wood in foils		106	1	---	---	---	---	---	---	---	1
Laminated timber		2.492	188	182	100	47	50	50			
Sawed or deroughed timber		305	20	19	16	13	14	24			

Table: 2.5.7.

## SECTOR: Beverages (Resume)

CONCEPTS	BRAZIL 1.967	NORTHEAST			BAHIA		
		1.965	1.966	1.967	1.965	1.966	1.967
PEOPLE EMPLOYED BY FIRMS OF:							
5 to 19 workers	6.858	---	2.743	2.117	---	149	101
20 to 99 "	10.099	---	1.140	1.163	---	166	198
100 to 499 "	3.861	---	2.421	1.895	---	1.003	995
500 or more	15.048	---	893	876	---	---	---
Total people employed in this Sector	45.839	---	7.197	6.031	---	1.318	1.294
PRODUCTION VALUE (NGr.)							
Total: (Prices 1967)	806.876	---	62.201	66.577	---	15.661	14.927
By employed person	17,6	---	8,6	11,0	---	11,9	11,5

SECTOR: BEVERAGES  
 LINE: Tropical Fruit Juices.

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity):								
Fruit juice, except grapes	1.000 L.	23.130	2.262	2.836	4.843	4	6	6
PRODUCTION VALUE IN:								
Fruit juice, except grapes	1.000 MCR.	28.393	1.667	2.748	1.815	3	18	24
NUM. OF FIRMS - FAB.:								
Fruit juice, except grapes	unit	30	14	15	11	1	1	1



SECTOR: Clothing and shoes (Resume)

Table: 2.5.8.

CONCEPTS	BRAZIL			NORTHEAST			BAHIA			
	1.967	1.965	1.966	1.967	1.965	1.966	1.967	1.965	1.966	1.967
PEOPLE EMPLOYED BY FIRMS OF:										
5 to 19 workers	9.507,	---	808	833	---	293	276	---	293	276
20 to 99 "	39.583	---	1.325	1.656	---	229	250	---	229	250
100 to 499 "	38.079	---	688	861	---	200	383	---	200	383
500 or more	19.010	---	1.280	1.328	---	---	---	---	---	---
Total people employed in this Sector	106.119	---	4.101	4.678	---	722	909	---	722	909
PRODUCTION VALE (N. Cr.)										
Total: (Prices 1967)	1.171.185	---	38.633	65.796	---	4.838	5.670	---	4.838	5.670
By employed person	11,1	---	9,4	10,2	---	6,7	6,2	---	6,7	6,2

SECTOR: CLOTHING AND SHOES  
 LINE: Confection.

TABLE: 2.5.8.1.

CONCEPTS	UNIT	BRAZIL		NORTHEAST			BAHIA		
		1.967	1.965	1.966	1.967	1.965	1.966	1.967	
<b>OUTPUTS (quantity):</b>									
Men shirts	1.000	17.595	930,0	2.890,4	3.222,5	118,5	146,9	202	
Children shirts	"	1.878	240,3	155,2	49,7	24,5	34,3	25	
Suits and vestments	"	1.314	4,8	4,8	0,5	---	3,6	---	
Jumpers	"	1.953	---	1,4	32,2	0,8	0,9	2,2	
Men socks	"	15.657	406,3	449,3	753,3	110,1	173,0	250,2	
<b>PRODUCTION VALUE IN:</b>									
Men shirts	1.000 NCr	127.996	3.744	12.260	19.111	257	331	883	
Children shirts	"	8.626	513	398	128	80	114	158	
Suits and vestments	"	54.500	106	170	64	---	135	---	
Jumpers	"	15.649	---	7	150	9	10	17	
Men socks	"	120.249	2.191	3.637	9.104	742	1.302	2.097	
<b>NUM. OF FIRMS - FAB.:</b>									
Men shirts	piece	367	33	33	29	18	15	17	
Children shirts	"	82	4	4	5	6	6	5	
Suits and vestments	"	83	5	5	2	---	2	---	
Jumpers	"	119	---	1	4	1	1	1	
Men socks	"	344	28	30	29	23	19	16	

Table: 2.5.9.

## SECTOR: Leather and skins (Resume)

CONCEPTS	BRAZIL 1.967	NORTHEAST			BAHIA		
		1.965	1.966	1.967	1.965	1.966	1.967
PEOPLE EMPLOYED BY FIRMS OF:							
5 to 19 workers	2.769	---	158	188	---	90	80
20 to 99 "	9.210	---	743	734	---	169	194
100 to 499 "	7.688	---	465	615	---	245	237
500 to more "	2.316	---	---	---	---	---	---
TOTAL PEOPLE EM- PLOYED IN THIS SEC- TOR	21.983	---	1.366	1.537	---	504	511
PRODUCTION VALUE: Total: (Prices 1967)	326.210	---	14.769	15.389	---	7.949	5.777
By employed person:	14,8	---	10,8	10,0	---	15,7	11,3

SECTOR: LEATHER AND SKINS.  
LINE: Leather and Skins.

TABLE: 2.5.9.1.

CONCEPTS	UNIT	BRAZIL			NORTHEAST			BAHIA		
		1.967	1.965	1.966	1.967	1.965	1.966	1.967		
OUTPUTS (quantity):										
Pig Hide	Tn.	4.019	---	1.107	1	---	---	---	---	---
Cow Hide	1,000 m <sup>2</sup>	11.901,0	885	1.285,8	1.285,8	538,0	---	---	---	---
Sole Leather	Tn.	32.409	355	768	800,0	301	---	---	---	---
Fine Furs	1,000 m <sup>2</sup>	446,1	18,5	16,5	15,0	190,2	---	---	---	---
Glossed Leather	"	945,9	231,1	166,3	87,5	---	---	---	---	---
Chrome	"	3.770,2	77,7	89,8	113,5	---	---	---	---	---
PRODUCTION VALUE IN:										
Pig hide	1,000 MCF.	10.600	---	6.668	2	---	---	---	---	---
Cow hide	"	94.690	3.657	1.154	9.684	1.869	---	---	---	---
Sole leather	"	68.158	585	160	1.413	331	---	---	---	---
Fine furs	"	7.896	166	1.083	179	1.117	---	---	---	---
Glossed leather	"	12.683	1.044	544	340	---	---	---	---	---
Chrome	"	29.159	376	544	958	---	---	---	---	---
NUM. OF FIRMS - FAB.:										
Pig hide	piece	28	---	---	1	---	---	---	---	---
Cow hide	"	168	20	20	31	2	---	---	---	---
Sole leather	"	284	50	49	69	8	---	---	---	---
Fine furs	"	23	5	5	2	6	---	---	---	---
Glossed leather	"	28	7	6	6	---	---	---	---	---
Chrome	"	70	4	5	6	---	---	---	---	---

....

SECTOR: LEATHER AND SKINS  
 LINE: Leather and Skins.

TABLE: 2.5.9.1 ( continuation)  
 .... / ....

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity):								
Wash leather	1.000 m <sup>2</sup>	743,1	1,7	1,1	6,9	0,2	7,6	3,1
Leather tanning	"	784,8	0,9	0,8	1,0	---	---	---
PRODUCTION VALUE IN:								
Wash leather	1.000 MCR.	4.277	14	9	49	1	84	56
Leather tanning	"	1.260	6	9	12	---	---	---
NUM. OF FIRMS - FAB.:								
Wash leather	piece	23	1	1	6	1	1	1
Leather tanning	"	66	1	1	1	---	---	---

TABLE: 2.5.10.

## SECTOR: MECHANICS (Resume)

CONCEPTS	BRAZIL		NORTHEAST			BAHIA		
	1.967	1.965	1.966	1.967	1.965	1.966	1.967	
	PEOPLE EMPLOYED BY FIRMS OF:							
5 to 19 workers	6.442	---	139	803	---	---	---	
20	285.146	---	622	661	---	---	---	
20 to 99 "	96.512	---	180	175	---	141	168	
100 to 499 "	25.410	---	---	---	---	---	---	
500 or more "	90.510	---	941	1.039	---	141	168	
TOTAL PEOPLE EMPLOYED IN THIS SECTOR:								
PRODUCTION VALUE (NCR)								
Total: (Prices 1967)	1.486.114	---	10.110	9.620	---	3.288	6.214	
By employed person:	16,6	---	10,7	9,1	---	18,3	26,0	

SECTOR: MECHANICS.  
LINE: Brazier Trade.

TABLE: 2.5.10.1.

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity):								
Braz. until 10 T V/h		741	2	3	12	---	---	10
Braz. 15 to 50 T "		96	---	---	1	---	---	---
Braz. 50 or more "		61	---	---	---	---	---	---
PRODUCTION VALUE IN:								
Braz. until 10 T V/h		12.844	5	10	60	---	---	56
Braz. 15 to 50 T "		4.100	---	---	10	---	---	---
Braz. 50 or more "		2.366	---	---	---	---	---	---
NUM. OF FIRMS - FAB.:								
Braz. until 10 T V/h		40	1	1	3	---	---	1
Braz. 15 to 50 T "		9	---	---	1	---	---	---
Braz. 50 or more "		6	---	---	---	---	---	---

SECTOR: MECHANICS  
 LINE: Mechanics.  
 TABLE: 2.5.10.2.

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST				BAHIA			
			1.965	1.966	1.967	1.965	1.966	1.967		
			OUTPUTS (quantity):							
Fractional motors	1.000	653,3	---	---	---	---	---	---	---	---
Motors from 1 to 5 CV	"	268,3	---	---	---	---	---	---	---	---
PRODUCTION VALUE IN:										
Fractional motors	1.000 MCr.	30.361	---	---	---	---	---	---	---	---
Motors from 1 to 5 CV	"	29.174	---	---	---	---	---	---	---	---
NUM. OF FIRMS - Feb.:										
Fractional motors		24	---	---	---	---	---	---	---	---
Motors from 1 to 5 CV		18	---	---	---	---	---	---	---	---



TABLE: 2.5.11.

CONCEPTS	BRAZIL 1.967		NORTHEAST			BAHIA		
	1.965	1.966	1.965	1.966	1.967	1.965	1.966	1.967
PEOPLE EMPLOYED BY FIRMS OF:								
5 to 19 workers	---	236	---	236	257	---	157	141
20 to 99 "	---	1.259	---	1.259	1.134	---	363	553
100 to 499 "	---	1.600	---	1.600	2.657	---	814	773
500 or more "	---	---	---	---	566	---	---	---
Total people employed in this sector:	---	3.095	---	3.095	4.614	---	1.334	1,467
PRODUCTION VALUE (NGP. Total: (Prices 1967)	---	60.013	---	60.013	62.830	---	32.330	31.861
By employed person	---	19,4	---	19,4	13,6	---	24,2	21,7

SECTOR: METALLURGY (Resume)

SECTOR: METALLURGY

LINE: Steel and Sheetings.

TABLE: 2.5.11.1.

CONCEPTS	UNITS	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity):								
Steelbars	1.000 Tm.	2.764,4	12,8	16,4	15,1	2,6	8,7	---
Steel slabs	" "	507,8	---	---	---	---	---	---
Medium w. sheets	" " b	203,5	---	---	---	---	---	---
Light-gage sheets	" "	103,5	---	---	---	---	---	---
Cold laminated sheets	" "	217,6	---	---	---	---	---	---
Strips	" "	56,6	1,2	1,6	0,7	---	---	---
PRODUCTION VALUE IN:								
Steelbars	1.000 MCR	399.887	2.173	2.996	2.920	605	616	---
Steel slabs	" "	185.003	---	---	---	---	---	---
Medium w. sheets	" "	58.476	---	---	---	---	---	---
Light-gage sheets	" "	41.404	---	---	---	---	---	---
Cold laminated sheets	" "	90.096	---	---	---	---	---	---
Strips	" "	37.075	500	823	399	---	---	---
NUM. OF FIRMS - Fap.:								
Steelbars	piece	28	2	2	2	1	1	---
Steel slabs	" "	6	---	---	---	---	---	---
Medium w. sheets	" "	7	---	---	---	---	---	---
Light-gage sheets	" "	5	---	---	---	---	---	---
Cold laminated sheets	" "	7	---	---	---	---	---	---
Strips	" "	18	6	1	1	---	---	---

....

SECTOR: METALLURGY  
 LINE: Steel and Sheerings.

TABLE: 2.5.11.1. (continuation)

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
<b>OUTPUTS (quantity):</b>								
Galvanized sheet	1,000 Tn.	44,7	0,011	0,015	---	---	---	---
Brass	" "	206,7	1,4	0,8	---	---	---	---
Sheet bar	" "	333,4	14,8	31,0	28,2	4,4	3,5	---
Light bars	" "	193,4	---	---	---	---	---	---
Heavy bars	" "	122,4	---	---	---	---	---	---
Light shapes	" "	108,9	---	---	0,1	---	---	---
<b>PRODUCTION VALUE IN:</b>								
Galvanized sheet	1,000 MCr.	28.986	6	500	---	---	---	---
Brass	" "	130.361	839	520	---	---	---	---
Sheet bar	" "	122.679	5.373	11.286	11.843	---	---	1.595
Light bars	" "	105.163	---	---	---	---	---	---
Heavy bars	" "	67.914	---	---	---	---	---	---
Light shapes	" "	42.315	---	---	73	---	---	---
<b>NUM. OF FIRMS - Fabs.:</b>								
Galvanized sheet	piece	2	1	1	---	---	---	---
Brass	"	2	2	2	---	---	---	---
Sheet bar	"	46	3	3	2	---	---	1
Light bars	"	24	---	---	---	---	---	---
Heavy bars	"	12	---	---	---	---	---	---
Light shapes	"	19	---	---	1	---	---	---

SECTOR: METALLURGY  
 LINE: Steel and Sheetings.

TABLE: 2.5.11.1. (continuation)

CONCEPTS	UNITS	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (quantity):								
Heavy shapes	1.000 NCr.	98,5	---	---	---	---	---	---
Rails, accesories	" "	102,4	---	---	0,006	---	---	---
Wires	" "	230,8	---	---	---	---	---	---
Middling products	" "	156,5	---	---	---	---	---	---
PRODUCTION VALUE IN:								
Heavy shapes	1.000 NCr.	34.004	---	---	---	---	---	---
Rails, accesories	" "	37.852	---	---	7	---	---	---
Wires	" "	79.419	---	---	---	---	---	---
Middling products	" "	37.419	---	---	---	---	---	---
NUM. OF FIRMS -								
Fab.:	unit	9	---	---	---	---	---	---
Heavy shapes	" "	5	---	---	1	---	---	---
Rails, accesories	" "	14	---	---	---	---	---	---
Wires	" "	9	---	---	---	---	---	---
Middling products	" "	9	---	---	---	---	---	---

SECTOR: METALLURGY

LINE: Ferroalloys.

TABLE: 2.5.11.2.

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
			<b>OUTPUTS (quantity):</b> Ferrochrome A.                   Tn.                   1.662 Ferromanganese A.               "                   30.849 Ferrosilicon-mang.               "                   4.738 Crude iron                         1,000 Tn.           2.441,8 Ferrosilicon                       "                   15,6 Ferrotungsten                    "                   200					
<b>PRODUCTION VALUE IN:</b> Ferrochrome A.                   1,000 NCr.       1.401 Ferromanganese A                 "                   13.693 Ferrosilicon-mang.               "                   2.221 Crude iron                         "                   238.077 Ferrosilicon                       "                   8.472 Ferrotungsten                    "                   41								
<b>NUM. OF FIRMS -Fab.:</b> Ferrochrome A.                   unit               3 Ferromanganese A.               "                   10 Ferrosilicon-mang.               "                   3 Crude iron                         "                   44 Ferrosilicon                       "                   10 Ferrotungsten                    "                   1								

SECTOR: METALLURGY

WIRE WIRES

TABLE: 2.5.11.3.

CONCEPTS	UNIT	BRAZIL			NORTHEAST			BAHIA					
		1.967			1.965			1.966			1.967		
		1.967	1.966	1.965	1.966	1.965	1.967	1.966	1.965	1.967			
OUTPUTS (quantity):													
Flat wires	1.000 Tn.	70,8	---	---	---	---	---	---	---	---			
Galvanized wires	" "	37,2	---	---	---	---	---	---	---	---			
Barbed wires	" "	19,8	---	---	---	---	---	---	---	---			
Oval wires	Tn.	1.143	---	---	---	---	---	---	---	---			
Patented wires	1.000 Tn.	17,4	---	---	---	---	---	---	---	---			
PRODUCTION VALUE IN:													
Flat wires	1.000 MCR	32.100	---	---	---	---	---	---	---	---			
Galvanized wires	" "	19.570	---	---	---	---	---	---	---	---			
Barbed wires	" "	10.870	---	---	---	---	---	---	---	---			
Oval wires	" "	275	---	---	---	---	---	---	---	---			
Patented wires	" "	14.840	---	---	---	---	---	---	---	---			
NUM. OF FIRMS - Fab.:													
Flat wires	Unit	21	---	---	---	---	---	---	---	---			
Galvanized wires	" "	10	---	---	---	---	---	---	---	---			
Barbed wires	" "	14	---	---	---	---	---	---	---	---			
Oval wires	" "	2	---	---	---	---	---	---	---	---			
Patented wires	" "	7	---	---	---	---	---	---	---	---			

SECTOR: METALLURGY  
 LINE: Non-ferric Metallurgy.  
 TABLE: 2.5.11.4.

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST			BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967
OUTPUTS (Quantity):								
Aluminium bars	1.000 Tn.	44,6	---	---	---	---	---	---
Aluminium sheets	" "	10,7	0,2	1,0	---	---	---	---
Primary shape lead	" "	14,5	---	---	5,1	9,1	12,5	---
PRODUCTION VALUE IN:								
Aluminium bars	1.000 NCr.	111.880	---	---	---	---	---	---
Aluminium sheets	" "	39.176	262	1.534	---	---	---	---
Primary shape lead	Million.NCr.	15,3	---	---	4,2	6,7	13,0	---
NUM. OF FIRMS - Fab.:								
Aluminium bars	unit	25	---	---	---	---	---	---
Aluminium sheets	" "	17	2	2	---	---	---	---
Primary shape lead	" "	7	---	---	1	1	---	1

SECTOR: METALLURGY  
 LINE: Non-ferric Metallurgy.

..../...

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST				BAHIA					
			1.965	1.966	1.967	1.965	1.966	1.967				
OUTPUTS ( quantity):												
Lead sheets	Tn.	5.204	216	278	116	---	---	---	---	---	---	---
Primary shape copper	Tn.	6.433	---	---	---	---	---	---	---	---	---	---
Primary shape tin	Tn.	2.606	---	---	---	---	---	---	---	---	---	---
Bronze	Tn.	4.460	---	---	---	---	---	---	---	---	---	---
PRODUCTION VALUE IN:												
Lead sheets	1.000 NCr.	7.535	272	377	173	---	---	---	---	---	---	---
Primary shape copper	"	10.656	---	---	---	---	---	---	---	---	---	---
Primary shape tin	"	23.032	---	---	---	---	---	---	---	---	---	---
Bronze	"	20.418	---	---	---	---	---	---	---	---	---	---
NUM. OF FIRMS - F.p.:												
Lead sheets	unit	8	1	1	1	---	---	---	---	---	---	---
Primary shape copper	"	7	---	---	---	---	---	---	---	---	---	---
Primary shape tin	"	11	---	---	---	---	---	---	---	---	---	---
Bronze	"	27	---	---	---	---	---	---	---	---	---	---



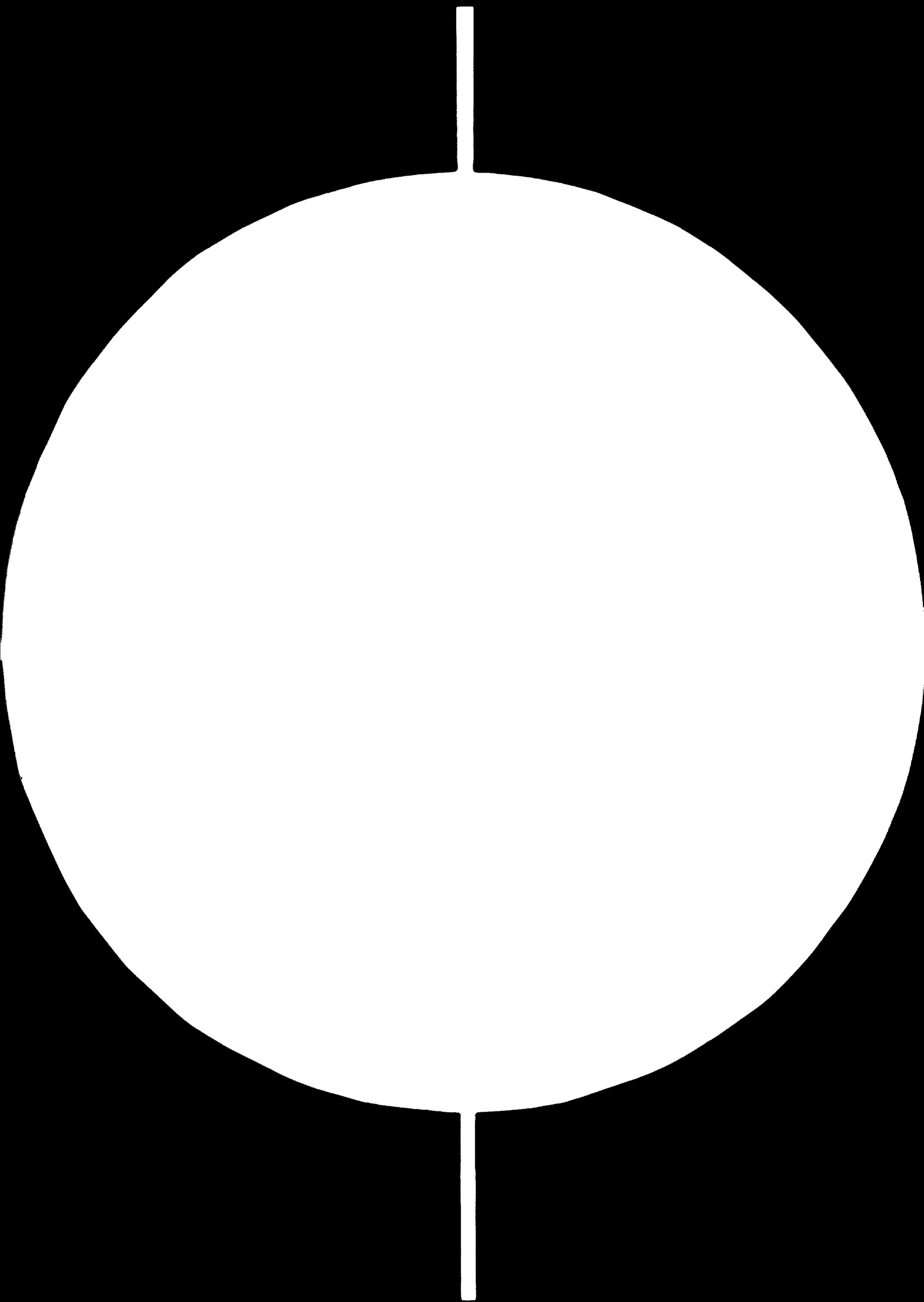
SECTOR: METALLURGY  
 LINE: Pipes and Smeltings.

CONCEPTS	UNIT	BRAZIL 1.967	NORTHEAST				BAHIA		
			1.965	1.966	1.967	1.965	1.966	1.967	
OUTPUTS (quantity):									
Steel pipes without seam	1,000 Tn.	85,2	---	---	---	---	---	---	---
Steel pipes with seam	"	74,8	---	---	0,3	---	---	---	---
Smelted iron pipes	"	93,0	---	---	---	---	---	---	---
Smeltings from steel	"	29,1	0,1	0,01	0,2	0,15	0,12	---	---
PRODUCTION VALUE IN:									
Steel pipes without seam	Millions RCF.	36,011	---	---	---	---	---	---	---
Steel pipes with seam	"	49,625	---	---	206	---	---	---	---
Smelted iron pipes	"	45,295	---	---	---	---	---	---	---
Smeltings from steel	"	39,048	23 1/2	158	644	0,13	0,13	---	---
NUM. OF FIRMS - Fab:									
Steel pipes without seam	piece	8	---	---	---	---	---	---	---
Steel pipes with seam	"	15	---	---	1	---	---	---	---
Smelted iron pipes	"	6	---	---	---	---	---	---	---
Smeltings from steel	"	24	1	1	1	2	2	---	---

**B - 581**

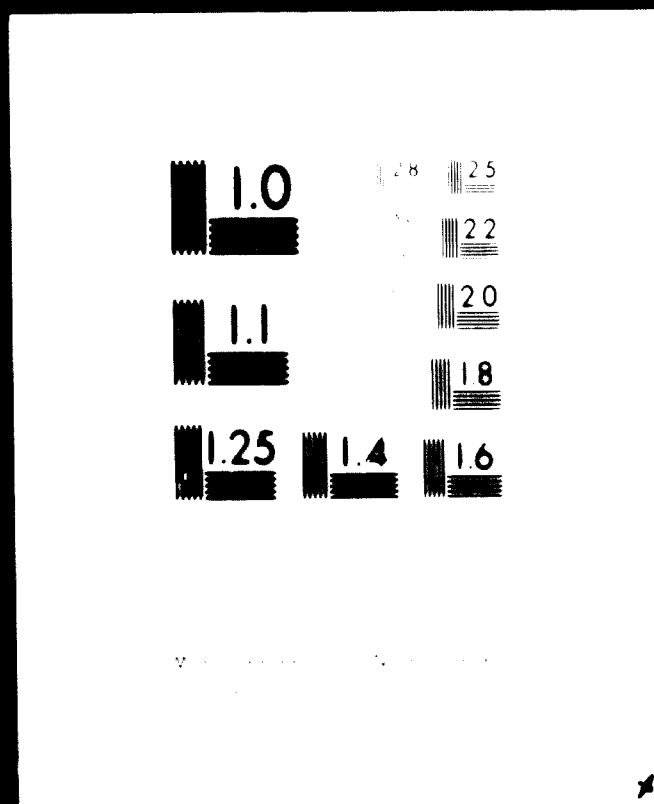


**81.09.17**



# 7 OF 7

## 02510



24 ×  
D



**BIBLIOGRAPHY**

## B I B L I O G R A P H Y

.....

BANCO CENTRAL DO BRASIL.-"Boletim" (Several issues)Rio de Janeiro, 1969-1970.

BANCO CENTRAL DO BRASIL.- "Relatorio 1969" Rio de Janeiro, 1970.

BANCO DA BAHIA.-"Relatorio e balancos 1969"Salvador, 1970.

BANCO DO NORDESTE DO BRASIL, S.A.-DEPARTAMENTO DE ESTUDOS ECONOMICOS DO NORDESTE (ETENE).- "Consumo de produtos industriais do Nordeste, resumo de pesquisa em vinte e quatro cidades", Fortaleza, 1969.

BANCO DO NORDESTE DO BRASIL, S.A.-DEPARTAMENTO DE ESTUDOS ECONOMICOS DO NORDESTE (ETENE).- "Distribuição e níveis da renda familiar do Nordeste urbano" Fortaleza-Ceará, December 1969.

BANCO DO NORDESTE DO BRASIL, S.A.-"Petrolina-Juazeiros: aspectos socio-econômicos e Área de influencia comercial" Fortaleza-Ceara, September 1968.

BARROS SOBRINHOJ.F. MANOEL, SECRETARIO DE INDUSTRIA E COMERCIO.- "Report to Unido: revised background and status of Cedim project" Salvador, September 1970.

COMISARIA DEL PLAN DE DESARROLLO ECONOMICO Y SOCIAL.-"El Plan de desarrollo económico y social. (29 volumes) - Madrid 1969.

COMISARIA DEL PLAN DE DESARROLLO ECONOMICO Y SOCIAL.-"Estudio y promoción de un conjunto integrado de industrias en el area Cadiz-Muñoz-Sevilla. Madrid, 1968.

COMISSÃO DO DESENVOLVIMENTO INTEGRADO DO RECONCAVO.-

"Pesquisa sobre o consumo de produtos industriais" Salvador, 1967.

COMISSÃO DO DESENVOLVIMENTO INTEGRADO DO RECONCAVO.-

"Termos de referencia"

CONTAP (CONSULTORIA TÉCNICA DE ADMINISTRAÇÃO E PLANEJAMENTO).-

"Planejamento local integrado da microrregião Nordeste da Bahia"  
Juazeiro, 1968.

COPLAN.- "Plano de desenvolvimento local integrado do município de  
Feira de Santana" Feira de Santana, 1968.

CHAVES, GILBERT - (ESCRITÓRIO).- "Plano de desenvolvimento integra-  
do do município de Itabuna estudo preliminar" Itabuna, 1968.

DEPARTAMENTO DE ESTRADAS DE RODAGEM DO ESTADO DA BAHIA.-

"Relatório das atividades no exercício de 1969" Salvador 1970.

DEPARTAMENTO DE ESTRADAS DE RODAGEM DO ESTADO DA BAHIA.-

SECRETARIA DOS TRANSPORTES E COMUNICAÇÕES.- "Orçamento programa  
sintético e analítico (two volumes) Decreto Nº 21.648 de 30.12.1969  
y Portaria da S.T.C. de 701" - 1970.

EGNER, ERICH.- "Política regional y desarrollo económico" Ediciones  
Deusto, Bilbao 1967.

FEDERAÇÃO DAS INDUSTRIAS DO ESTADO DA BAHIA.- "Cadastro Industrial  
da Bahia 1966-1967". Salvador, 1967.

FEDERAÇÃO DAS INDUSTRIAS DO ESTADO DA BAHIA.- "Cadastro Industrial  
da Bahia 1969", Salvador, December 1969.



FUNDAÇÃO GETULIO VARGAS.-"Balanço de uma década (1959-1969)"Publi-  
cado en Cojuntura Económica. January 1970.

FUNDAÇÃO GETULIO VARGAS.- "Contas nacionais do Brasil Atualização".  
Published by Economical Cotunction. July 1970.

GAUTHEROT, MARCEL.-"Aratú the heart of industrial Bahia" Hamburg,  
1970.

GEOTECNICA, S.A. (O.T.I.-I.P.T.).- Estudo da viabilidade dos projetos  
de irrigação dos rios Itapicuru e Vazabarris" Salvador, January 1970.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTADISTICA (I.B.G.E.) "Anuario  
estadístico do Brasil años 1960, 1966, 1967, 1968 y 1969" Rio de  
Janeiro.

I.B.G.E.- "Censo agrícola 1960" . Bahia.

I.B.G.E.- "Censo comercial e dos serviços 1960" . Bahia.

I.B.G.E.-"Censo industrial de 1960, Sergipe-Bahia-Minas de Gerais.  
VIII Recensamiento geral do Brasil" Rio de Janeiro.

I.B.G.E.- "Industrias de transformação, dados gerais-Brasil 1964-1965  
Rio de Janeiro 1967.

I.B.G.E.- "Pesquisa Industria Transformadora", años 1965 y 1967 .  
Rio de Janeiro. Years of reference.

I.B.G.E.- "População, Habitação, Mae -de-Obra, Salario, Instrução".  
Rio de Janeiro. 1st Trimester 1969. DOCGEPD NUM. 27

I.B.G.E.-"População, Mão-de-Obra, Salários, região V"(Pesquisa Nacional por amostra de domicílios) Rio de Janeiro, 2nd. Trimester 1969 (DOC GEPI Nº 34) and August 1969 (DOC GEPI Nº 23).

I.B.G.E.- "Síntese estatística, Bahia 1970". Rio de Janeiro 1970.

INTECSA.-"Resumen del Estudio del emplazamiento de la refinería de petróleo del litoral Catalán. Texto y Resumen Madrid 1969.

INTERNACIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.-"Water for economic development". Washington, D.C. May 1967.

INTERNACIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.-"Economic growth of Brazil problems and prospects". Washington, October 23rd. 1967.

IRTON VILLAS LEAO.-"Panorama político mineral de Estado da Bahia" Secretaria de Minas e Energia do Estado da Bahia July 1970.

KLAASSEN L.H.- "L'équipement social dans la croissance économique régionale" . OCDE-OECD. Paris 1968.

KLAASSEN L.H.- "Méthodes de sélection d'industries pour les régions en stagnation". OCDE-OECD.

KLAASSEN L.H.-"Organisation de coopération et de développement économique" OCDE-OECD. Paris, 1965.

LUCENA V.G.- "Pernambuco, un convite a industria" . Pernambuco, 1969.

MINISTERIO DA AGRICULTURA.-"Livro anual da agricultura"

MINISTERIO DO INTERIOR.- "Incentivos fiscais e financeiros para o Nordeste". 1969.

MINISTERIO DO INTERIOR.- "Incentivos para a industria e agricultura do Nordeste". 1968.

MINISTERIO DO INTERIOR.- "IV Plano Director de desenvolvimento economico e social do Nordeste (1969-1973)" Recife, 1968.

MINISTERIO DO INTERIOR.- "Regulamento dos incentivos fiscais e financeiros". Marzo, 1969.

MINISTERIO DO INTERIOR, D.N.O.C.S.- "Evolucao e problema da irrigacao do Nordeste".

MINISTERIO DO INTERIOR, DEPARTAMENTO DE INDUSTRIALIZACAO.- "Projetos aprovados pela SUDENE".

MINISTERIO DO INTERIOR. SUPERITENDENCIA DO DESENVOLVIMENTO DO NORDESTE.- "Sudene Dez Anos". Recife, 1969.

MINISTERIO DO PLANEJAMENTO E COORDENACAO GERAL.- "Programa estrategico de desenvolvimento 1968-1970". Rio de Janeiro, 1969.

UNITED NATIONS.-"Analysis and projections of economical development." New York, 1970.

UNITED NATIONS.-Industrial conglomeration in Europe and Near East". New York, 1970.

UNITED NATIONS.- "Paper and cellulose in Latin-America. New York", 1970.

UNITED NATIONS.-"Setting of Bricks and tiles Industries within countries on development" New York, 1969.

UNITED NATIONS.-"Estimation of necessities of managing and technical personnel in certain industries" New York, 1969.

UNITED NATIONS.-"Internal and external financing". New York, 1969.

UNITED NATIONS.-"Teaching of economical administrators in industry of industrial development." New York, 1969.

UNITED NATIONS.- "Guide for the construction of a complex of commercial fertilizers". New York, 1969.

UNITED NATIONS.- "Sour fruits industrializing". New York, 1969.

UNITED NATIONS.- "Brazilian industry of synthetic polymers". New York, 1969.

UNITED NATIONS.- "Preparation, evaluation and performing of projects for chemical fertilizers manufacturing ". New York, 1969.

UNITED NATIONS.- "Profiles of manufacturing establishments Vol I y II United Nations". New York, 1969.

UNITED NATIONS.- "Production of fertilizers within six countries with plenty disponibilities of natural gas". New York, 1969.

UNITED NATIONS.- ""Statistical year-book annuaire statistique 1969". New York, 1970.

UNITED NATIONS.-Use of surplus capability for exports. New York, 1969.

NØRREGAARD RASMUSSEN P.- "Relaciones Intersectoriales" Aguilar. Madrid, 1963.

ORGAO OFICIAL DO CENTRO INDUSTRIAL DE ARATU.- "Aratú". Salvador, September 1970.

PROJETOS E URBANIZAÇÃO, LTDA.- "Plano de desenvolvimento local integrado do Município de Ilheus". Ilheus, 1970.

REVISTA DA EDITORA ABRIL.- "Brasil em Examen". September 1970.

SECRETARIA DA ECONOMIA, DEPARTAMENTO ESTADUAL DE ESTADISTICA.- "Anuario agropecuario 1966".

SECRETARIA DA INDUSTRIA E COMERCIO.- "Contratantes e fornecedores industriais". Salvador, September 1970.

SECRETARIA DA INDUSTRIA E COMERCIO, GOVERNO DE PERNAMBUCO.- "Pernambuco. Projetos aprovados na Sudene".

SECRETARIA DA INDUSTRIA E COMERCIO, NUCLEO DE ASSISTENCIA INDUSTRIAL.- "Subcontratação entre industria na Bahia". Salvador, 1968.

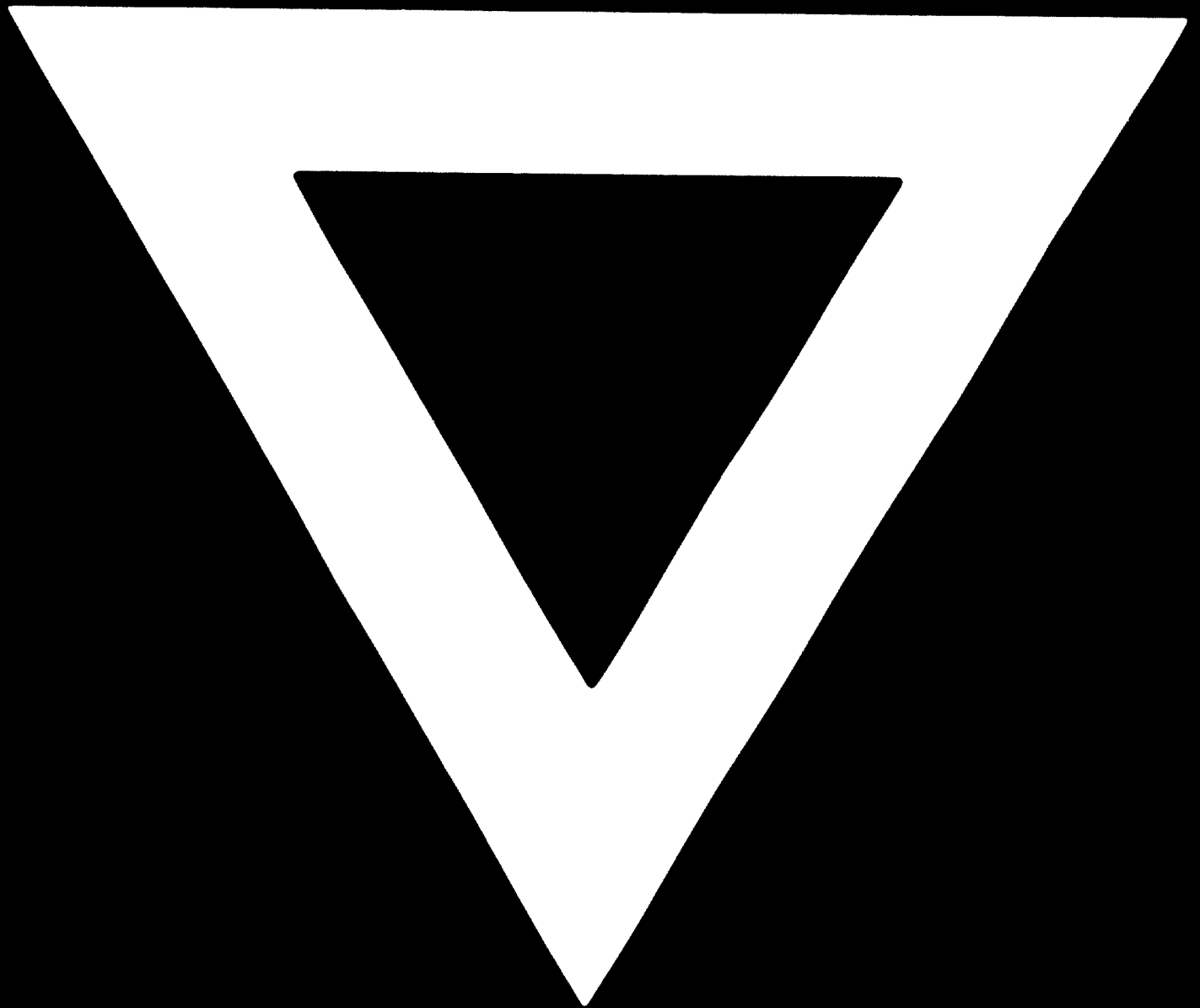
SINDICATO INDUSTRIAS QUIMICAS.- "La producción química española". Madrid, 1969.

SUDENE.- "Cooperativismo e Nordeste. Vol 4, Nº 2". July December, 1969

TAMAMES R.- "O Brasil e a integração econômica da América Latina".

VISAO.- 7th November 1970. Interview with Dr. Delfim Netto. Pages 34 to 52.

**B - 560**



**81.08.25**