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

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# BRAZIL 1/

by

Francisco Liguori
Director of the Industry and Commerce Department
of the State of Bahia
Salvador (Bahia), Brasil

and

Lenir Correira-Lima
Adviser
Secretariat of Planning, Science and Technology
Salvador (Bahia), Brasil

and

Teodoro Oniga
Chief
Centre for Technological Evaluation of the
National Institute of Technology
Rio de Janeiro, Brasil

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

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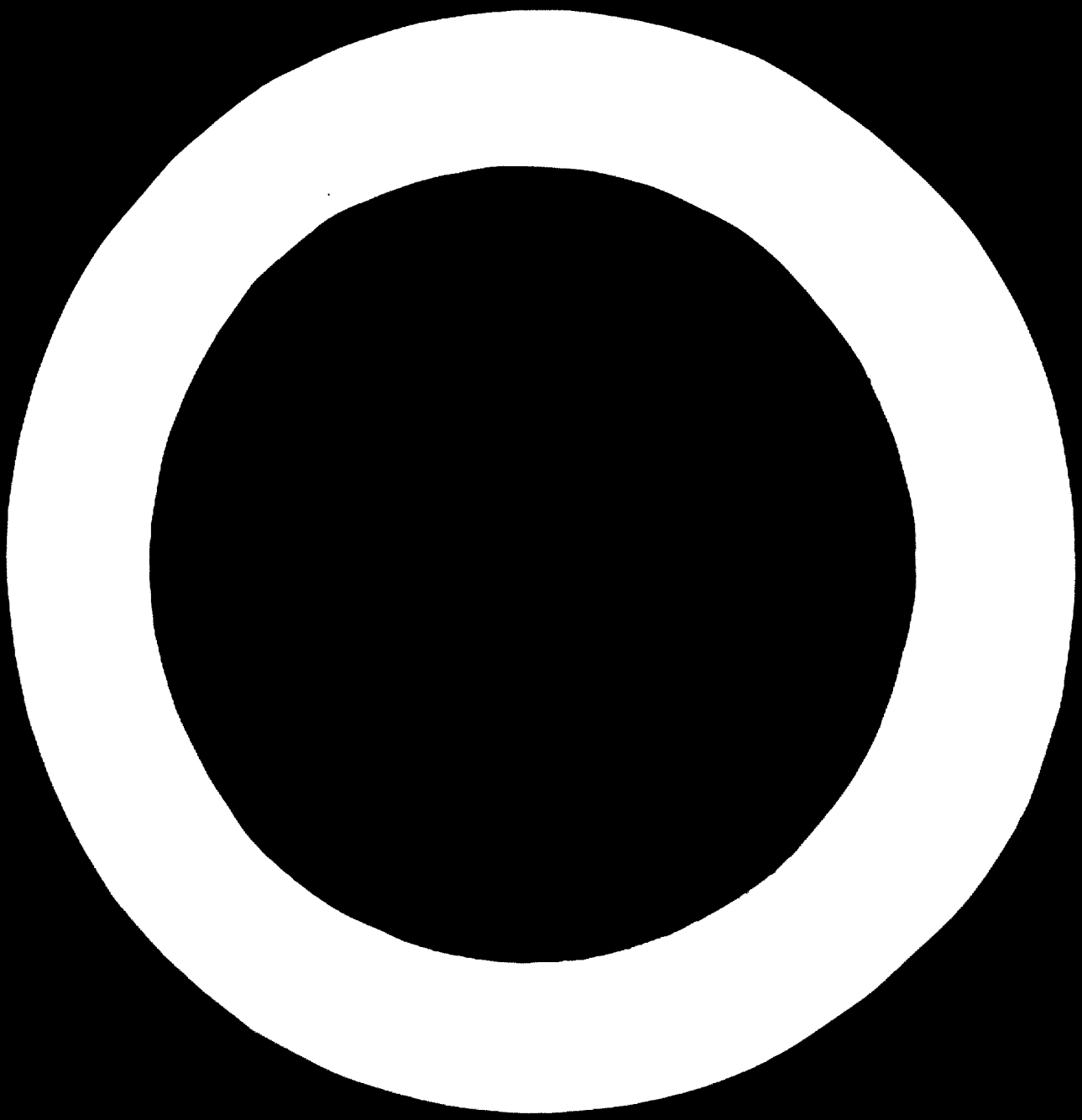
# INDUSTRIAL INFORMATION IN BANIA

## REVIEW OF EXPERIENCE

Report prepared by
Francisco Liguori and Lenir Correira-Lima

## SUMMARY

The under-developed countries urgently need up-to-date information in order to expand their economic and industrial activities. For this purpose their own research efforts are not enough; the collection, adaptation and dissemination of experience and information from industrialized countries and those which are in the process of developing are also necessary. It is therefore essential to expand the exchange of scientific, technical and economic knowledge through an international system of industrial information, in co-operation with regional and national agencies.



## 1. Introduction

This study, summarizing the experiences of the State of Bahia in regard to industrial information, reflects, firstly, the rather elementary stage reached in the development of industrial information services at the state and national level, and, secondly, the shortage of time and resources which has prevented the submission of a more detailed report.

The importance of the accumulation and dissemination of industrial information in the modern economy is obvious. Nevertheless, few effective steps have been taken by developing countries and regions with a view to the full utilization of data, processes and methods available at the present time, owing to the lack of adequate services capable of collecting, selecting, storing and distributing information.

Broadly understood, information should embrace the techniques of documentation, education and cultural development, supplementing the work of scientific research institutes and educational establishments, and thus promoting the acceleration of socio-economic development.

The idea of a general information system, to be introduced gradually and to incorporate the various research centres, was considered as long ago as 1954 by the Government of the State of Bahia at the time of the establishment of the Foundation for Planning (Fundação de Planejamento - CPE). What is envisaged is the establishment of an open system, capable of adapting itself to all the sources of information available throughout the world, and functioning as an efficient instrument for the transfer of technology.

## 2. Background

In Bahia, the Foundation for Planning, at the time of the preparation of the Bahia Development Plan (PLANDEB) for 1960-1963, took the first step in the direction of the systematic treatment of material. The plan, which could not be implemented fully, provided for the establishment of a system for co-ordinating economic and technological research and of a documentation, information and publication service.

The most important aspect of the work of this service will be its statistical activities, with the organization of the State Statistical System, linked with technical documentation making possible the transfer of technological and economic information from all over the world, and general documentation, the latter based on pre-existing organs:

(i) Operational documentation utilized for projects and programmes - the Foundation for Planning;

(ii) Basic documentation of interest for the purpose of general studies - the Institute for Economics and Finance of Bahia (IEFB);

(iii) Scientific and technical documentation of a specialized nature - specialized institutes and the Federal University of Bahia;

(iv) Statistical information - the Department of Statistics of the State of Bahia.

Unfortunately, the Bahia Development Plan was not implemented and the whole of the documentation service which had been planned practically came to nothing, with the exception of the Foundation for Planning. This resulted in the familiar consequences of the absence of a rational documentation system - the wasting of valuable experience, the loss of time and money in the repetition of work already carried out, the monopolization of information for personal advantage or the satisfaction of scientific vanity, etc. - reducing efficiency in the solution of social problems and the utilization of the scarce resources of highly qualified manpower.

Recently, in 1967, a report submitted to the Government of the State of Bahia by a mission organized by the Inter-American Development Bank, describing the general situation of the Recôncavo Baiano* in order to define the nature of studies required for the carrying out of its mandate, suggested the establishment of a research, documentation and information system aimed at preparing, gathering and publishing basic information on the region, for the benefit of:

(i) The studies, projects and evaluations envisaged for the Recôncavo;

(ii) The public and private sectors, in relation to scientific, technical and economic problems.

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* The Recôncavo Baiano is an area of land around the Bay of Todos los Santos and the city of Salvador, capital of the State of Bahia.

In considering this system, it is important to stress its scope in terms of geography and subject matter since, while it was conceived in order to support the integrated development programme for the Recôncavo - on which it was in its turn to be based - it aims to be all-embracing in the subject matter covered.

The system was planned on the basis of two sub-systems:

(i) The research sub-system, aimed at the programming of research and at planning in regard to appropriate institutes for carrying it out;

(ii) The documentation and information sub-system, aimed at the rational utilisation of experience already acquired, with the objective of collecting, organising and distributing specialized information and documents of importance for development projects and programmes. It would also embrace such aspects of the scientific and technological know-how and experience of other nations as might be assimilated and used to speed economic growth, covering two specific areas:

- Regional information, to help develop local consciousness and, at the same time, provide knowledge which will make it possible to attract foreign finance to Bahia;
- External information, which, in conjunction with Brazilian experience, will enable solutions to be found to problems relating to economic development.

Taking into account the objects indicated, the structure of the research, documentation and information system would be as follows:

(i) Centre for the processing of statistical, scientific and technical data;

(ii) Information on bibliographical sources, etc.;

(iii) Apparatus and services for reproduction.

## 3. Prospects

The establishment of the centre for the processing of statistical, scientific and technological data would involve high capital and operating costs which would be justified only if there is a high rate of utilisation. This will be attained within an integrated system, if the Government of the State of Bahia uses the same equipment and part of the "overhead" facilities for other tasks.

Centre for Research and Development (CEPED)

Planned in the context of the North-East of Brazil, and particularly Bahia, where the economic situation is quite different from the rest of the country, the Centre for Research and Development is currently being set up at Salvador, with the following purposes:

(i) To be the basic element supplementing the functions of the university in the socio-economic community, so that the creative capacity of the universities can be expanded through the subcontracting of research work, etc.;

(ii) To serve as the instrument for governmental action in the publication of technological research;

(iii) To integrate the flow of information between enterprises, universities and the Government, becoming the nucleus of the technological information system;

(iv) To encourage socially useful initiatives.

The structure of CEPED includes a Scientific and Technological Documentation and Information Service, one of the main purposes of which is the establishment of a special infrastructure for documentation and information of a technical and scientific character, in a position to make available bibliographical and documentary material to the various sections of the Centre and to promote the dissemination of science and technology in Bahia and the North-East of Brazil. In addition to gathering reference material, it will above all be a centre for receiving and sending out information.

The Documentation Service of CEPED could also constitute the first step towards the carrying out of technological research, which may perhaps not be possible on any significant scale until the Centre has sufficient resources to sustain the research effort. At the same time, it will perform the task - of inestimable value - of making available to technicians, industrial enterprises and other users information which is essential to allow them to keep constantly abreast of developments. If this is to be possible, it must be stressed that a documentation centre must not limit itself to the function of supporting research but must provide advisory services in priority areas, and play a leading role in encouraging the habit of consulting technical and scientific material, this being provided in an attractive form and on a frequent basis, through news bulletins or the direct supply of information. During the initial period the Documentation Service will devote itself to the priority problems concerning petrochemistry, metallurgy, ore processing, ceramics, the processing of foodstuffs, health engineering, pollution, and the technology of wood, leather and vegetable oils; during subsequent stages, it will extend its services to other state and regional agencies.

The Documentation and Information Service consists of two sections, one concerned with documentation and the other with publication and reproduction.

(i) Documentation Section

Register: This will contain information on research institutions, national and foreign centres for the training of scientists and technicians, documentation and information centres, information services attached to public organs, centres for extension work and the dissemination of information, centres for technical experimentation in industry, centres for assistance to enterprises, private technical consultancy organizations, etc., so that objective information will be available to those seeking to make contact with institutions and specialists;

Consolidated catalogue: For the purpose of the systematic arrangement of bibliographical material, a consolidated catalogue will be maintained, scientific and technical documentation located and this documentation made available rapidly to users, by the fastest means of communication, when services are requested;

Library: The library stock will consist above all of publications of wide circulation and major importance in specific fields, making it possible to keep abreast of all technical and scientific developments and indicating the most recent innovations in the various sectors. There will be technical and scientific reports which, even when such works have for various reasons a small circulation, may be of great interest. Reports of conferences and seminars, of wider circulation, will also be very important sources of information. The resources will likewise include manuals providing practical data, for ready and frequent use, as well as technical and scientific textbooks. The library will ensure the selective dissemination of information, in order to inform technicians and scientists individually of the existence of recently published documents relating to their fields of interest.

(ii) Publication and Reproduction Section

This will be responsible for all technical services relating to the publication of technical and scientific works.

Secretariat of Industry and Commerce of the State of Bahia

The Secretariat of Industry and Commerce is the government department responsible for the formulation and implementation of policies for the industrial development of the State of Bahia.

The aim of these policies for the industrial sector is the adoption of a complex of measures to re-organize and expand the factors available at the present time, through the assimilation of new techniques, leading to an increase in the industrial product and raising levels of employment and income.

Organized in 1967, this department is performing effective work, through its various divisions, in the promotion of industrial development, based on the broad guidelines put out by the Federal Government, through the Superintendency for the Development of the North-East (SUDENE).

In the first phase, almost the whole effort was concentrated on the modernization of the industrial park, together with the establishment of the urban-industrial infrastructure for the Aratu Industrial Centre, and successes of international significance have been achieved.

Today, the programme of the Secretariat of Industry and Commerce provides for the establishment in the metropolitan area of Salvador, with the support of the Federal Government, of Brazil's second chemical and petrochemical development zone, containing industrial units of large size, and of a metallurgical complex. An effort to bring industry into the interior is also being made through the establishment, at the development poles of the State of Bahia, of duly equipped industrial areas, oriented towards the utilization of local resources, and through a technical assistance effort directed basically towards small-scale and medium-scale industry, supported by UNIDO.

This whole programme is under the responsibility of three subsidiary organs of the Secretariat of Industry and Commerce:

(i) Industry and Commerce Department - responsible for studies with a view to the encouragement of growth and diversification in the industrial sector, through the granting of incentives, including fiscal incentives; offering enterprises systematic auditing and consultancy services; co-ordinating the establishment of industrial areas throughout the State of Bahia;

(ii) Aratu Industrial Centre - responsible for establishing urban-industrial infrastructure facilities at Aratu, near Salvador;

(iii) Foundation-Centre for Industrial Development - responsible for the development of small-scale and medium-scale industry through industrial extension work, the preparation of projects for the establishment of plants, the extension and modernization of enterprises, and the training of entrepreneurs and industrial technicians.

These organs, functioning in an integrated manner, have been to a certain extent carrying out industrial information tasks, although in an unsystematic way, resulting in an under-utilization of technical and material resources; this gave rise to the idea of centralizing in a single agency the co-ordination of all services concerned with

industrial information and investment promotion. This idea was reinforced at the time of the initiation of the Programme of Technical Assistance for Small-Scale and Medium-Scale Industry, when UNIDO specialists made a similar proposal, further recommending the utilization of industrial extension services to bring industrial information to enterprises. After the matter had been fully considered, the Industry and Commerce Department was given the task of establishing an Industrial Information and Investment Promotion System which would meet the needs of all organs concerned with industry.

The choice of this Department is attributable to the fact that the following divisions are already functioning within it:

(i) The Economic Information and Statistics Service, which is concerned with keeping a register and census of industrial units existing within the State, the identification of sources of statistical data of industrial interest and studies to identify industrial opportunities;

(ii) The Documentation Service, responsible for the acquisition and selection of technical material of industrial interest, storing, in a rational manner, documentation concerned basically with economics, administration, finance and technology; and for preparing translations, providing reproduction services, and keeping abreast of the bibliographical bulletins of regional, national and international institutions for the purpose of an intensive exchange of publications;

(iii) The Investment Promotion Service, responsible for planning and co-ordinating, at the level of the Secretariat of Industry and Commerce, activities relating to the promotion of investment, through the establishment of a collection of basic industrial information for communication, on a selective basis, to potential investors in the country and abroad.

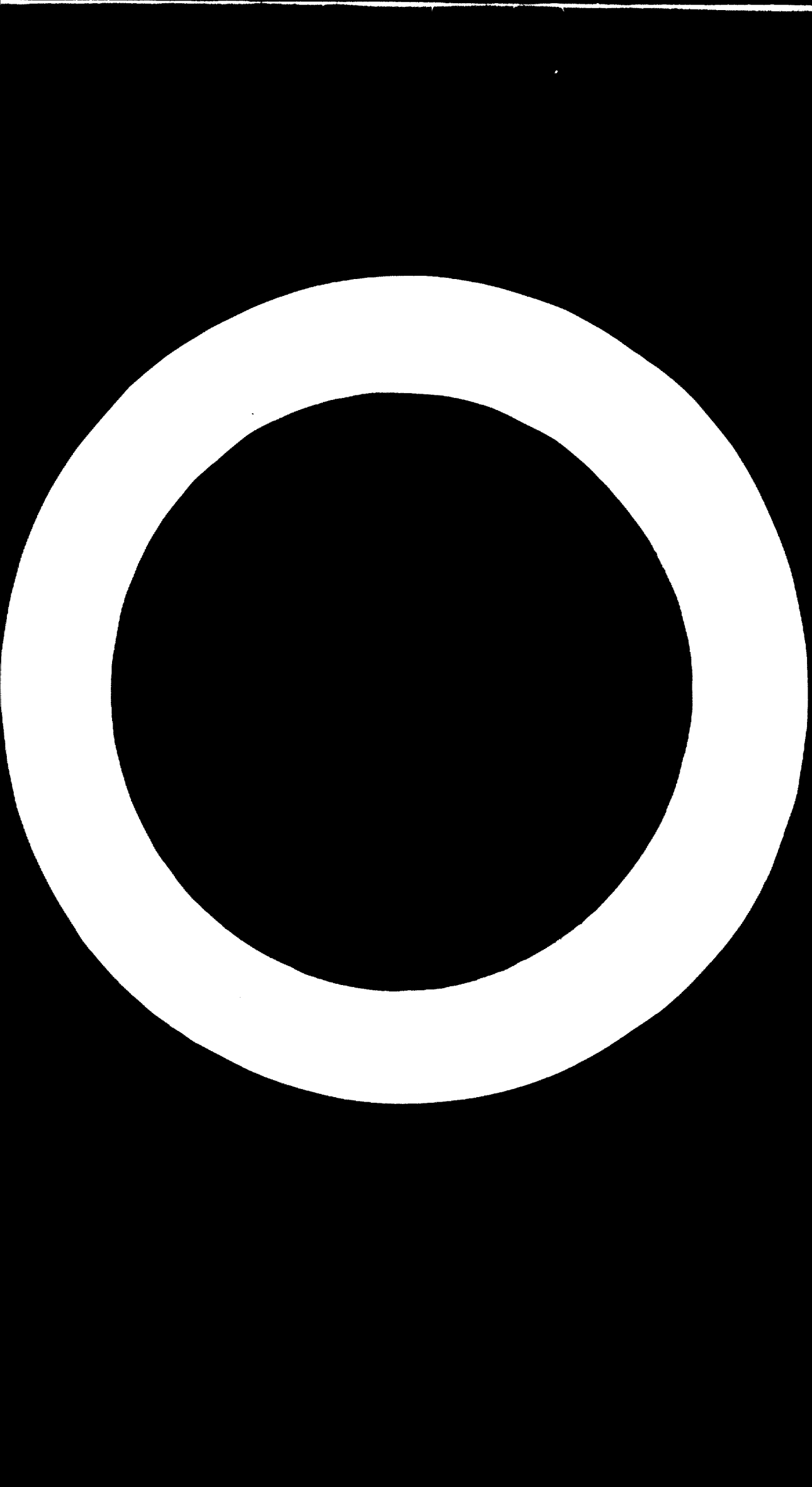
The Industrial Information and Investment Promotion System will take over the functions of these three Services, in order to try and obtain a higher index of operational efficiency. It will be closely linked to CEPED, to other similar national and regional institutions, and, with technical assistance from UNIDO, to the International System of Industrial Information and Investment Promotion.

## 4. Proposal

The State of Bahia, through the Secretariats of Industry and Commerce and of Planning, Science and Technology, proposes the following to UNIDO:

(i) A programme of technical assistance with the aim of establishing and ensuring the effective functioning of the Industrial Information and Investment Promotion System of the State of Bahia;

(ii) The systematic transmission to its Documentation Service of all the information material available which is of interest for industrial development, and the dissemination throughout the world of industrial information on Bahia.



# TECHNOLOGICAL INFORMATION IN BRAZIL

Report prepared by

Teodoro Oniga

## SUMMARY

There are in Brasil, as Professor von Ledebur has pointed out in document ID/WG.103/5, more than 200 documentation centres. The report presents a very brief survey of the principal centres providing industrial information, with special emphasis on the National Institute of Technology, which has an accumulated experience of 50 years and, since 1968, includes a very dynamic Centre for Technological Information. In 1970 this Centre received technical assistance from UNIDO through the presence of an expert, Mr. Bruno Hofer, for two months.

The present policy of the Brazilian Government is aimed at building up a national information network, comprising six main flows of information: scientific information (co-ordinated by the Brazilian Institute of Bibliography and Documentation (IBBD)); free technological information (National Institute of Technology (INT)), patented know-how (National Institute of Industrial Property (INPI)), two specialised flows, one agricultural and the other economic and administrative, and finally an external collection and dissemination network, to be organised by the Ministry of Foreign Affairs.

Brazilian experience in this field could be very helpful for the whole Latin American region. An appeal is addressed to UNIDO to continue and intensify its valuable assistance to the states of Brazil and to the Latin American countries. Another appeal is addressed to the Seminar participants to induce their respective Governments to become parties to the Paris Convention, bearing in mind the fundamental importance of patents as vehicles for the transfer of technology.

## 1. Introduction

The need for technological information has been felt by Brazilian industry for twenty years already. Apart from many vertically specialized information sources (e.g. in iron and steel metallurgy, roads, copper, food, etc.), there are now several establishments with a more or less high degree of horizontal information development. All these centres will soon be integrated in a nation-wide information network serving all classes of users and supplying not only scientific and technological information but also industrial information (patented know-how) and agricultural, economic and administrative information, originating in Brazil or abroad.

There are in Brazil, as Professor E. von Ledebur has pointed out in document ID/WG.103/5, more than 200 documentation centres. The present report, besides a very brief survey of the principal centres providing industrial information, with special emphasis on the National Institute of Technology (INT), will also outline the general policy of the Brazilian Government in the field of scientific, technological and industrial information and formulate some general recommendations.

## 2. Existing information centres

### 2.1. The National Institute of Technology and its Centre for Technological Information (INT/CIT)

(Avenida Venezuela, 82, 4° Andar, ZC-05, Rio de Janeiro)

The National Institute of Technology (INT) is a federal agency forming part of the Ministry of Industry and Commerce of the Federative Republic of Brazil.

The present Institute originates from the Experimental Station for Fuels and Minerals, which was established at the end of 1921, with Ernesto Lopes da Fonseca Costa (who died in 1952) as its Director. In 1933, the Station became the Institute of Technology which, in 1934, was renamed the National Institute of Technology. The present organization of INT resulted from successive additions in 1938 (Inorganic Chemistry, Organic Chemistry, Metallurgy, Building Materials Technology, Sugar and Fermentation, Textiles and Paper, and Fuels, Lubricants and Combustion Engines Divisions) 1956 (Metrology and Electricity Divisions), 1949 (Training Section), 1961 (Ceramics, Rubber and Industrial Physics Divisions), 1968 (Centre for Technological Information) and 1970 (Centre for Technological Evaluation). After the 1961 reorganization, the Division of Metrology became the National Institute of Weights and Measures (INPM). INT now has about 400 employees, including some 80 scientists, chemists and engineers.

The Centre for Technological Information (CIT) was established in order to provide industry with information relating to industrial products and processes. It also aims to ensure a reorientation of the research work performed by INT as a whole, in accordance with the actual needs and optimal development of industry. For these reasons, a co-operation programme has been established with the National Centre for Industrial Productivity (CNPI) of the National Confederation of Industries (CNI), allowing progressive integration between industry and INT.

The services rendered by the Centre are:

(a) Dissemination of abstracts from technical and economic literature, including patents, through the inclusion of the bulletin "Documentação & Informação" (Documentation and Information) in the monthly magazine "Indústria & Produtividade"* of CNI, which is distributed to about 7,000 industrial concerns;

(b) Selected dissemination of abstracts, notes and patent information to specific branches of industry through the bi-monthly bulletin "Resumos", reproduced in offset and covering information on the "rubber and plastics industry" and on "ore and metallurgy";*

(c) Answering specific questions, by means of a combination of literature search, referral and expert opinion (the contribution of the technical staff of INT is very valuable in this respect);

(d) Collecting, indexing and filing documents of particular interest to INT;

(e) Surveying the information needs of Brazilian industry by circulating questionnaires and collecting a large quantity of useful data.

An important fact is that CIT has successfully started to collaborate with such agencies as CNPI and the National Institute of Industrial Property (or patent office) (INPI). This broad view adopted in regard to co-operation has also opened up new financial channels for CIT, in particular as regards the National Bank for Industrial Development (BNDE).

The publication of technological abstracts began in January 1969 and was extremely well received by the readers of the magazine "Indústria & Produtividade". The priority industrial fields were chosen according to the report on industrial research prepared by the joint group of the National Research Council of Brazil and the National Academy of Science of the United States of America, entitled "Industrial Research in Brazil as a

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* The secretariat of the Seminar can make available, for consultation purposes, one copy of each publication (Ind. & Prod., vol. 4, No. 38, July 1971; INT/CNI Res. Borracha e Plásticos, vol. 2, No. 2, March/April 1971; INT/CNI Res. Mineração e Metalurgia, vol. 1, No. 2, March/April 1971). It is planned to include two more industrial sectors each year (textiles and building materials will be next).

Factor for Development". The rubber and plastics and ores and metallurgy sectors were chosen to unitiate the studies in 1970-1971. The first issue of the Rubber Plastics Bulletin appeared in October 1970 and the Ores & Metallurgy Bulletin in January 1971.

Still in 1969, UNIDO was asked to send an expert on information systems. This request was approved in 1970 and Mr. Bruno Hofer, manager of the Documentation Centre of the Productivity Centre of Austria, performed his duties during the period October-December 1970. His suggestions are gradually being put into practice.

As part of the national effort, CIT has carried out the planning for the Information Centre of the Institute of Technology of Pernambuco, and a special agreement with the Institute for Technological Research (IPT) of São is being studied.

CIT occupies an area of about 750 $m^2$ and its technical and administrative staff number twenty-four, headed by Mrs. Angela Pompeu. About twenty INT chemists and engineers collaborate with CIT by preparing technological abstracts. All the staff of INT provide answers to specific inquiries. CIT has all the equipment needed for reproduction, besides one IBM MT/72 for information storage and retrieval using magnetic tape. Apart from free subscriptions, the libraries of INT and CIT pay subscriptions to 101 periodicals of a general or specialized nature.

Two years after the publication of the inset "Documentação & Informacão", CIT made a survey, primarily in the industrial sector, to evaluate interest in the information disseminated. The replies received to about 25 per cent of the more than 5,000 questionnaires sent out reveal an extraordinary interest in and demand for information.

CIT, besides answering all inquiries, is in constant contact with a number of industrial concerns which frequently serve as sources of information in regard to inquiries originating in smaller concerns. There has been a big demand for summarised articles (430 during 1970) and a large number of technical inquiries (148 special topics in 1970).

The contacts made during the months of aggressive dissemination have provided an excellent basis for field work over the coming years, the principal objective of CIT.

### 2.2. Centro Nacional de Produtividade na Indústria (CENPI)
(National Centre for Industrial Productivity)
(Av. Nilo Peçanha, 50, Edificio De Paoli, Rio de Janeiro)

Attached to the National Confederation of Industries, CENPI is mainly active in the field of training executives and administrative personnel. Another activity consists of studies of certain sectors of the Brazilian economy. With regard to industrial

information, mention should be made of the close collaboration which the Documentation Section (SEDOC) has established with CIT/INT, with the aim of supplementing their technological information through contributions from the managerial fields, including industrial profiles, plant requirements, feasibility studies, etc. SEDOC itself has been successful in establishing good contacts not only with Brazilian industry but also with foreign agencies working on similar lines. The head of SEDOC is Mrs. Noemi Nascemba.

2.3. Instituto Nacional do Propriedade Industrial (INPI) (National Institute of Industrial Property) (Ministry of Industry and Commerce, Praga Maná 7, Rio de Janeiro)

The former Patent Department, now (since March 1971) the National Institute of Industrial Property, contributes to the bulletin "Documentação & Informação" and also seeks to promote general and specific information on patents, trademarks and industrial models and designs throughout the country. The Institute will try to decentralize this service after the patent documentation itself has been reorganized.

INPI is headed by Commandant Thomas Thedim Lobo, who has just moved into his office in Brasilia.

2.4. Brasilian Institute of Bibliography and Documentation (IBBD) (Av. General Justo, 171, Rio de Janeiro)

The Brasilian Institute of Bibliography and Documentation is organised within the framework of the National Research Council, and its President is Mrs. Celia Zaher. Founded in the early 1950's, IBBD has been most active in collecting documentation and information material from Brazilian and foreign sources. It has published many useful directories and reference books and built up files for sources of information. It also takes part in numerous international projects (e.g. issuing the Brazilian part of the "Technical Journal for Industry"). In addition, it issues national bibliographies in various fields; these have recently started to cover technology also.

The efforts of IBBD to enter the field of industrial information, by providing bibliographical references in reply to specific inquiries, does not seem to have been very successful, for the simple reason that what industry wants is facts and figures, not lists of publications. The service within IBBD responsible for technical information should therefore maintain close contacts with CIT, supplying raw material for industrial information, while CIT would try to obtain the clients.

Another important activity of IBBD is the training of documentalists. In this respect also, close contacts with the national industrial information network should be established, as it seems necessary to organise a course aimed specifically at meeting the requirements for practical use in industry.

2.5. Institute for Technological Research (IPT)
(Cidade Universitária, São Paulo)

The long history of this Institute goes back to 1899. It is now an autonomous state body, having close ties with the University of São Paulo, and supported by the State Government. There are 1,000 employees with a technical staff of about 250. IPT has about 50 sections which are grouped in the following technical divisions: civil engineering mechanics, wood, metallurgy, applied geology, ore treatment and chemistry. There is a library stocked with 1,200 periodicals and reports.

Under the superintendency of Professor Alberto Pereira de Castro, a fully computerized "information centre" has been planned, which will not only take care of disseminating information but also handle all administrative information for IPT itself.

Another interesting activity planned by the Institute is a pilot study to be conducted among the foundries and metalworking concerns of São Paulo, involving visits for the purpose of introducing the Institute's services; some active information material will be prepared for this study. These activities of IPT seem very promising, as also the co-operation of this important centre within the Brazilian network of information services.

2.6. Office for the Co-ordination of Post-Graduate Engineering Courses of the Federal University of Rio de Janeiro (COPPE - UFRJ)
(Cidade Universitária, Ilha do Fundão, Rio de Janeiro)

The technological programme of COPPE makes use of the vast knowledge of its lecturers in applied research projects. Mr. Acher Mossé, head of the technological programme, is starting to build up computerized documentation on the basis of the holdings of the University library (including about 600 journals), to incorporate the holdings of other libraries also at a later stage. The material so acquired will be available to other institutions or individuals. Production engineering, human factors and industrial layout are among the most interesting themes dealt with by the COPPE information service.

2.7. National Institute of Weights and Measures (INPM)
(Praça Mauá, 7, 10º Andar, Rio de Janeiro)

Headed by Mr. Moacir Reis, the Director-General (Acting Director: Armenio Lobo da Cunha Filho), this Institute, with the assistance of Mr. E. Layton UNIDO standards expert, has created a network of offices and laboratories covering all the industrialised areas of Brazil.

2.8. Brasilian Standards Association (ABNT)
(Av. Almirante Barroso, 54, 15º Andar, Rio de Janeiro)

The Brasilian Standards Association also maintains local offices in the more important localities, its collaboration with the industrial information network being of great importance. The Executive Secretary of ABNT is Mr. Felix von Romke, who is responsible for the new dynamism of the Association, in the field of Brasilian and regional standardisation (through the Pan American Standards Commission (COPANT)).

2.9. Other institutions

Among the more than 200 specialised institutions, one may mention the following:

Centro de Informação Siderúrgica (Centre for Information on Iron and Steel Metallurgy)
Instituto Brasileiro de Siderurgia, Rio de Janeiro

Instituto de Pesquisas Rodoviarias (Institute for Road Research)
Av. Presidente Vargas, 435, 3º Andar, Rio de Janeiro

Centro Brasileiro de Informação do Cobre (CEBRACO) (Brazilian Centre for Information on Copper), São Paulo (SP)

Centro Tropical de Pesquisas e Tecnologia de Alimentos (Tropical Centre for Food Research and Technology), Campinas (SP)

Centro de Documentação sobre Urbanismo (CEDUL) (Centre for Documentation on Town Planning), Rio de Janeiro

(See also the paper presented by Mr. Francisco Liguori and Mr. Lenir Correira-Lima on industrial information in the State of Bahia.)

3. The National Information System

A nation-wide system for scientific and technological information was proposed to the National Research Council of Brasil by the Brasilian Institute of Bibliography and Documentation (IBBD), the National Institute of Technology (INT) and the National Institute of Industrial Property (INPI). After consolidation of the proposals, the scheme was discussed at a meeting of Brasilian technologists in São Paulo (19-22 May 1971) and approved by an inter-ministerial commission.

The system planned will include six main flows of information:

(a) The scientific information network, made up of the universities, libraries and other documentation centres, under the general co-ordination of IBBD;

(b) The free technological information network, comprising all the Institutes, laboratories and other industrial research and information centres, under the general guidance of INT;

(c) The flow of patented know-how, organized and disseminated by INPI;

(d) A specialized network for agricultural information, probably under the supervision of the Campinas Centre for Food Technology;

(e) Another specialized flow in the field of economic and administrative information probably co-ordinated by the Brazilian Institute of Geography and Statistics (IBGE);

(f) The external collection and dissemination network, organised by the Ministry of Foreign Affairs (Itamaraty).

The policy of these integrated networks will be established by a General Council, in which not only the Government and all the co-ordinating bodies but also the users will be represented. Each network will be subdivided regionally and investigations organised in such a manner as to avoid duplication and to accelerate the diffusion of pertinent information. The system may be completed before 1973.

## 4. Some general recommendations

Brazil is a very good example to illustrate the whole Latin American region, as the problems raised and the variation in per capita income existing among its 22 states reflect the situation of the Latin American countries. The Brazilian experience in the field of industrial information could therefore be very helpful for the whole ECLA region.

It is urged that UNIDO should continue and intensify its fruitful assistance to the states of Brazil and also to the Latin American countries. It is also urged that the Seminar participants should induce their respective Governments to become parties to the Paris Convention and of the World Intellectual Property Organization (WIPO), bearing in mind the fundamental importance of patented know-how as a vehicle for the transfer of technology.

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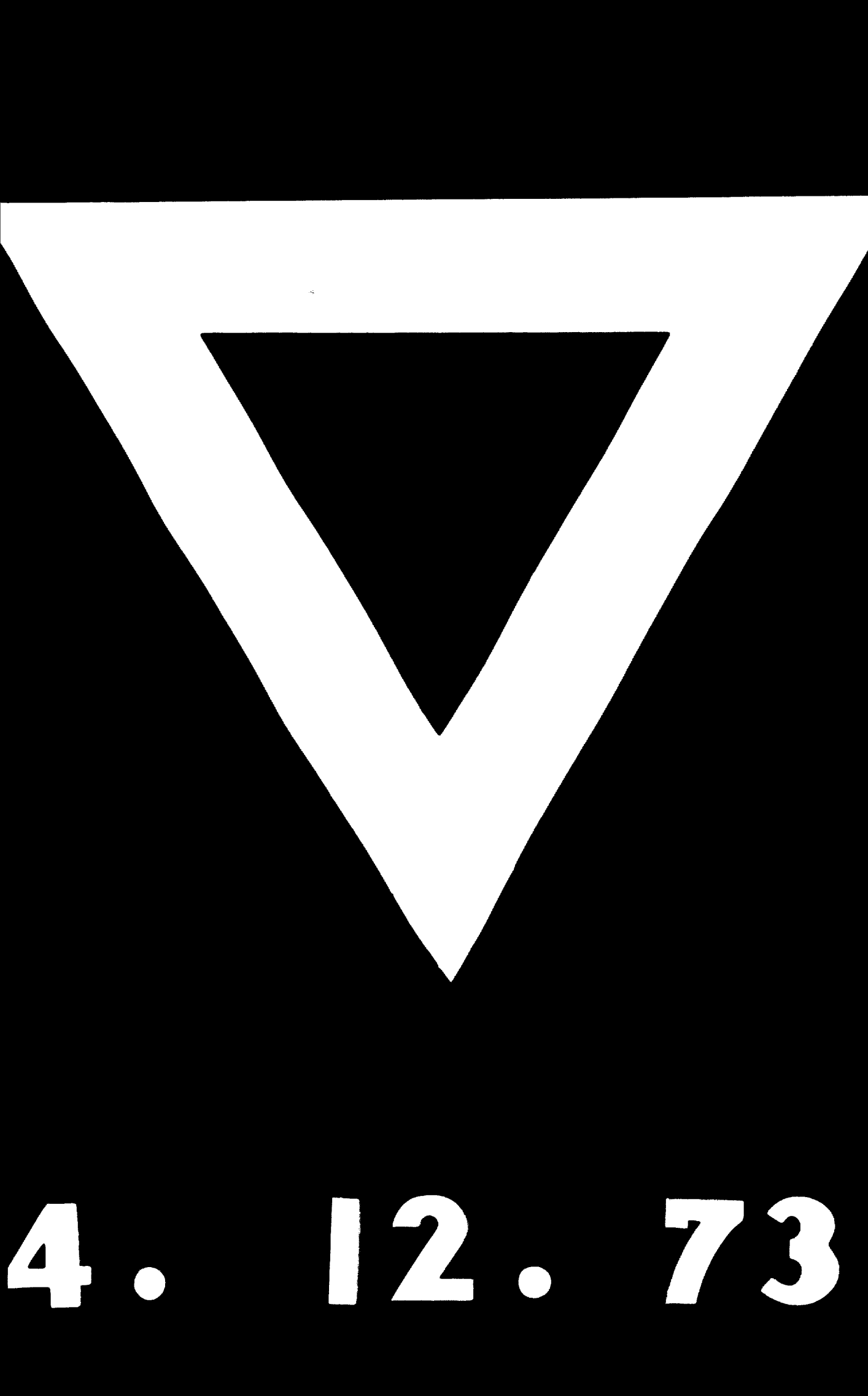
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