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for the French-Speaking Countries of the ECA Region
Rabat, Morocco, 1-10 January 1973

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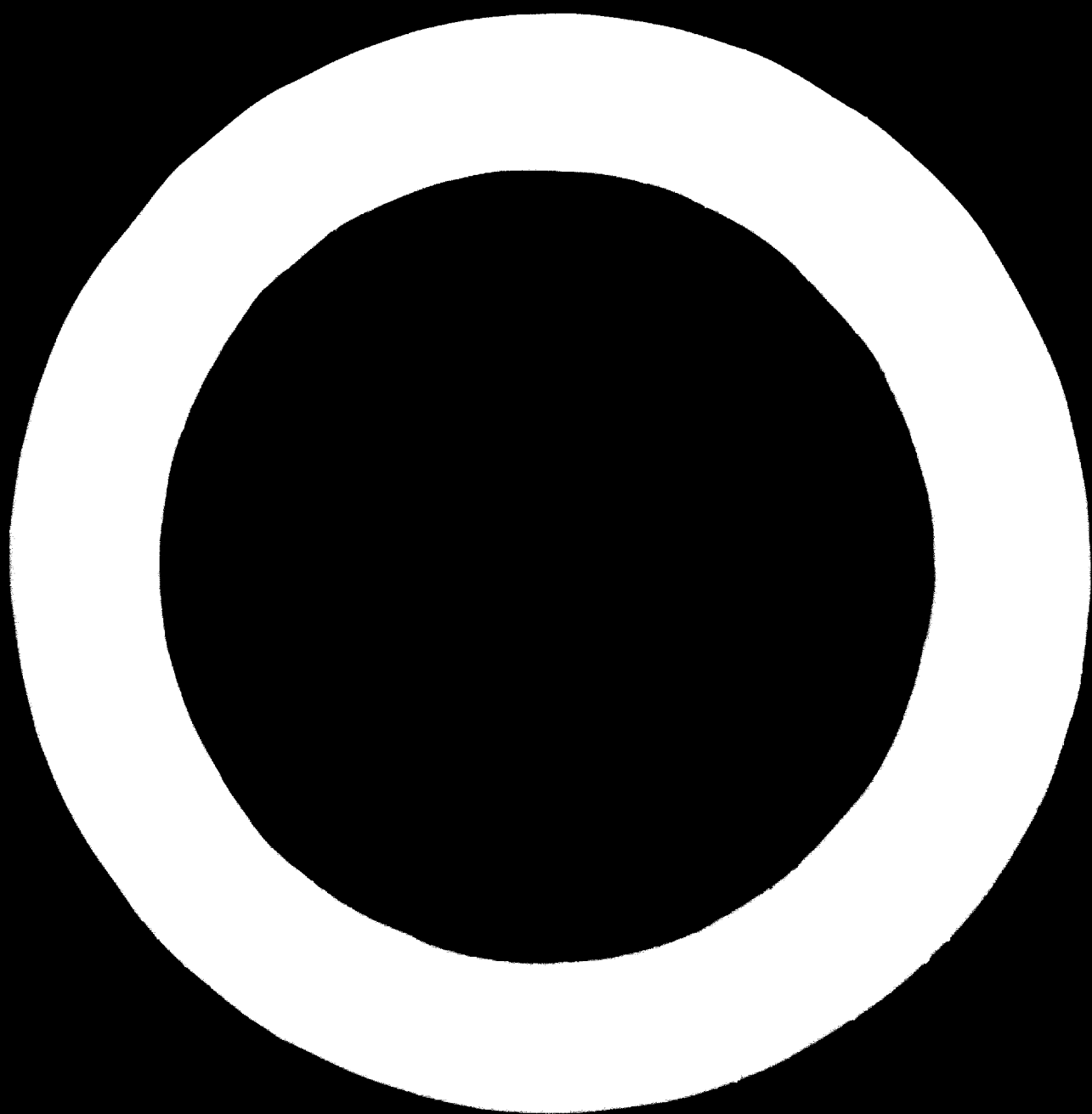
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INTRODUCTION

The Seminar on Industrial Information held at Rabat from 4 to 14 June 1973 was organized by UNIDO in co-operation with the Moroccan Government.

Its purpose was to bring together persons responsible for framing policies and establishing the structures for industrial development services in the French-speaking countries in the ECA (Economic Commission for Africa) region in order to determine the importance of the role played by industrial information in the industrialization process in the African countries and to decide on the best way to promote the dissemination of industrial information and use it to accelerate the industrialization and economic growth of the developing countries.

The opening meeting was chaired by Mr. Imani, Secretary of State for Planning of the Moroccan Government. The Seminar elected the following officers:

- Chairman: Mr. Fassi-Fihri, Morocco;
- Vice-Chairman: Mr. Kehi, Ivory Coast;
- Rapporteur: Mr. Romdhane, Tunisia.

Of the 21 countries invited, 14 were represented, namely Burundi, Cameroon, the Central African Republic, Chad, Dahomey, Gabon, the Ivory Coast, Madagascar, Morocco, the Niger, Senegal, Togo, Tunisia and Zaire. In addition, five international, inter-governmental or national organizations were represented:

As co-organizer:

- Economic Commission for Africa (ECA), Addis Ababa,

As members:

- Maghreb Centre for Industrial Studies (CEIM), Tangier;
- African, Malagasy and Mauritian Common Organization (OCAM), Yaoundé;

As observers:

- Development Centre of the Organization for Economic Co-operation and Development (OECD), Paris,
- National Institute for Scientific and Technical Information (VINITI), Moscow.

The opening address was delivered by Mr. Imani, Secretary of State for Planning of the Moroccan Government. Other addresses were given by Mr. Mounni, Director for Industry and Mining of the Ministry of Trade and Industry; Mr. H. W. Kamberg, UNDP Resident Representative; Mr. K. M. Zerezghi, ECA representative at Addis Ababa; Mr. Fassi-Fihri, Director of the National Documentation Centre, and the Chief of the UNIDO Industrial Information Section.

The Seminar was organized and led by Mr. Carrière, Consultant at the Development Centre of the Organization for Economic Co-operation and Development (OECD); Mr. Van Dyk, consultant engineer at the Marcel Van Dijk Office; Mr. Menou, UNESCO expert, and a staff member of the Industrial Information Section, UNIDO.

1. WORK OF THE SEMINAR

After the usual introductory activities, the Seminar leaders asked the participants to make known the points in which they were mainly interested and their expectations in participating in the work of the Seminar. It was then suggested that the situation with regard to industrialization in each country represented might be described, as well as the problems each was encountering, especially with regard to information.

For three and a half days, the representatives of the countries and international, inter-governmental or national organizations represented presented short communications which gave rise to questions and discussions of each of the cases presented.

The Seminar leaders consolidated the approximately 200 subjects brought up by participants in the context of their communications and the subsequent discussions under the following four main headings:

- Industrial information: tentative definitions - users - requirements;
- Channels and sources of industrial information;
- Structure, means, methods and products of information systems;
- Role of UNIDO and the other international organizations in industrial information for the developing countries.

These four subjects formed the basis of the detailed discussions which followed.

The recommendations prepared by the officers of the Seminar were discussed and approved by the participants at the end of their work. Lastly, a number of visits and functions organized during the Seminar provided the opportunity for many contacts among the participants themselves and with their Moroccan hosts.

2. COMMUNICATIONS PRESENTED BY THE PARTICIPANTS

These communications, as contained in the documents circulated to participants, can be summarized as follows:

2.1. BURUNDI

Mr. Ntimanza, Counsellor in charge of studies at the Ministry of Economic Affairs, briefly described the geographical and economic situation of his country, stressing the fact that it was land-locked, that its economy was based on agriculture and stock-raising and that industry had been developed very little. He called the attention of the participants to the very small size of the domestic market. Lastly, he indicated that Burundi had no industrial information services as such.

2.2. CAMEROON

Mr. Boulologe, Deputy Chief of the Industrial Promotion Department of the Ministry of Industrial and Trade Development, stressed planning in Cameroon, pointing out the importance attached in the industrial field to the implementation of projects by private enterprises. With regard to industrial information, he listed the various bodies which had a more or less rational documentation on the information required for implementing industrial projects (Chamber of Commerce, Industry and Mining; Organization of Industrialists of Cameroon; National Investment Company, various ministerial departments and research institutes).

He drew the participants' attention to the Ministry of Industrial and Trade Development, which had a documentation, information and acquisition department and the Directorate for industry, comprising four departments, namely Technical Studies, Industrial Promotion, Agreements and Standardization. He also described the nature of requests for information from foreign companies, as compared with those from domestic investors. In this connexion, he outlined the various measures which had been taken to encourage local entrepreneurs to invest in the industrial sphere. Lastly, he said that there was no central organ for processing industrial information in Cameroon.

2.3. CENTRAL AFRICAN REPUBLIC

Mr. Sebiro, President of the Chamber of Industry and Handicrafts, gave information on the geographical, economic and industrial situation of his country. He drew the participants' attention to the unfavourable situation of a land-locked country, in particular with regard to transport. He described the activities of the Chamber of Industry and Handicrafts, which played a role in providing information to artisans or small-scale entrepreneurs. The activities of the Chamber of Industry and Handicrafts were listed. These included the joint artisans' fund, a listing of trades, the organization of meetings and the provision of advice to enterprises. Lastly, he drew attention to the difficulties arising out of the absence of trained personnel and the failure to recognize the opportunities afforded at the international level by information services.

2.4. IVORY COAST

Mr. Kehi, Officer in Charge of Information and Documentation at the Industrial Development Bureau (BDI), described the importance of industrial enterprises in the development of the Ivory Coast, stressing the fact that Ivory Coast industry was focussing on exports and the reduction of disparities among the regions. In order to achieve this, various elements had been necessary, including industrial information. In that connexion, he described the information role played by BDI, which disseminated project sheets and spread information by means of publications and selective dissemination and provided information on subcontracting supply and demand. He indicated that the Industrial Promotion Office co-operated with the Ivory Coast Centre for External Trade, the Ivory Coast Promotion Office and the Chamber of Industry of the Ivory Coast. Lastly, he stressed the importance attached by BDI to foreign contacts through its feelers abroad.

2.5. PAHOMBY

Mr. Logossou, Civil Administrator and Assistant Director for Industrial and Artisanal Programmes at the Directorate of Studies and Planning, described the geographical, economic and industrial situation of his country. He drew the participants' attention to existing difficulties with regard to information arising out of the fact that foreign enterprises did not participate in the national information system. He described the role played by the various departments of the Ministry of Planning in preparing the background files on promoters or purchasers. Although there was a definite lag with regard to information, an eventual solution appeared to be offered by the establishment of the Centre for Industrial Studies. Lastly, he drew the participants' attention to the difficulties being encountered in the selection of equipment.

2.6. GABON

Mr. Kamaya, Director for Industry of the Ministry of Mining, Industry, Energy and Water Resources, and Mr. Mendogo, Deputy Planning Commissioner of the Planning Commission, outlined the geographical and economic situation of the country. They indicated the importance of the industries extracting subterranean products and the forestry industry. Industrial information did not concern the large companies which controlled those industries and had their own information services. On the other hand, the small-scale and medium-sized domestic enterprises were interested in the information which could be supplied to them. In that connexion, the role of the Gabonese Agency for the Promotion of Industry and Handicrafts (PROMOGABON) was stressed, as were its endeavours to provide easier access to information. It appeared out of the question for a State industrial information service to be set up in Gabon. On the other hand, it seemed advisable for PROMOGABON to find the correspondent or correspondents it required in industrialized countries.

2.7. MADAGASCAR

Mr. Randriambahiny, Textile Engineer at the Directorate for Industry of the Ministry of Economic and Financial Affairs, said that there were a relatively large number of bodies able to supply information in his country, including the Ministerial Department responsible for planning, the Department of Economic and Financial Affairs and the Industrial Development and Promotion Office, the National Statistics and Economic Research Institute and the Centre for Technical and Economic Information. With regard to the latter, he specified its objectives and functions, and also the resources, both material and human, at its disposal. The Industrial Development and Promotion Office (BDPI) was described as the main industrial information service in Madagascar. The purpose of BDPI was to contribute, in co-operation with the private sector and industrial development assistance bodies, to the implementation of the industrial plan in the field of prospecting studies, reception of investors and industrial promotion. BDPI had a documentation study section consisting primarily of a data bank. The data bank was organized in such a way as to ensure a supply of data, analysis of documents and books (by reading, summarizing and cataloguing), analysis of magazine articles, analysis of works and analysis of regulations and legislative texts.

2.8. MOROCCO

Mr. Zemmouri, Moroccan Standardization Service, Ministry of Trade and Industry, briefly described industry in Morocco, stressing the processing industries. After indicating the two types of investments made in the country (private and public investments), he discussed the various measures taken to promote industrial investment and the export of Moroccan manufactured goods. With respect to the information supplied by the Directorate for Industry, he said that there were two types of publication, i.e. regular publications and publications according to need. In addition, the Directorate for Industry had as a working tool the domestic information contained in industrial catalogues, investment files, sectoral studies and foreign trade statistics. The information received from abroad went largely unused although the Directorate for Industry received a number of foreign publications. Lastly, he pointed out that the Directorate for Industry had a Standardization Department which received and filed national and international standards.

Mr. Riahi, Chief of the Documentation Centre of the Directorate of Mining and Geology, described the special situation of the Documentation Centre of the Directorate for Mining and Geology, which was responsible, inter alia, for filing and utilizing the geological maps necessary for exploiting natural resources.

Mr. Fassi-Fihri, Director of the Moroccan National Documentation Centre (CND), and his colleagues organized for the participants a guided tour of the various departments of CND, whose role as co-ordinator of the Moroccan national documentation network was stressed. CND, which is subordinate to the governmental authority responsible for the plan, has the following main tasks:

- Surveying, collecting, indexing and microfiching Moroccan or other relevant scientific, technical and economic documentation;
- Surveying sources of foreign documentation which might be of interest to Moroccan technical services;
- Establishing and promoting a national network of documentation centres and services and specialized libraries having connexions with other national and international networks.

CND publishes indexes of technical documents which include explanatory notes, subject indexes, author indexes and bibliographical lists. An inquiry service endeavours to make it easier for research workers and technicians in general to

obtain both Moroccan and foreign documentation. For that purpose, it has set up a reference library containing useful bibliographies and basic collections in printed or microfiche form. In addition, it corresponds (or is prepared to correspond) on a regular basis with all the appropriate documentation centres and services throughout the world, exchanging inquiries and documents with them. The publications by the Secretariat of State and the microfiches prepared by CND serve as material for the exchanges. The CND Inquiry Service does not take the place of the documentation centres and services and libraries in Morocco, but co-operates with them to meet the documentation requirements of users. In some cases, it carries out the research and purchase or exchange of documents itself, while in others it confines itself to providing bibliographical information, advice or relevant guidance.

Mr. Benayoun, Secretary-General, and Mrs. A. El Khettar, Officer in Charge of Economic Surveys at the Industrial Development Office (ODI), which was formerly known as the Office for Industrial Studies and Participation (BEPI), explained the role of their office in the industrial development of Morocco, in particular with regard to feasibility studies relating to projects.

Lastly, the Ministry of Trade and Industry organized two visits to factories, one in the textile branch (a spinnery) and the other in the mechanical engineering branch (small farm machinery). These visits gave participants an opportunity to appreciate the industrial information requirements of the enterprises.

2.9. NIGER

Mr. Dankassoua, Chief of the Industrial Development Department of the Ministry of Economic Affairs, described the geographic and economic situation of his country, which had inadequate industrial infrastructure and was at a disadvantage in comparison with its neighbours. He described the legislative measures which had been taken to establish an investment code and promote industrial enterprises which might participate in the development of the country. The Government's efforts had been directed towards an industrialization programme which met the Niger's requirements, taking into account the reluctance of foreign private investors. State intervention took place through the Development Bank of the Republic of the Niger. The State did, however, reserve the possibility of setting up enterprises with mixed private and public ownership. Domestic industry was extremely weak, although new measures had

been adopted in that respect by the Government of the Niger. With regard to industrial information, the Industrial Expansion Office provided information for private investors. The Office was subordinate to the Ministry of Economic Affairs, Trade and Industry and primarily disseminated to investors statistical information and, occasionally, some basic studies. The Industrial Export Office was the permanent co-ordinating body dealing with industrial matters; it facilitated relations between promoters and the Government.

2.10. SENEGAL

Mr. R. Ba, Chief of the Industrial Information Department, and Mr. A. Ba, documentalist in the Industrial Information Department of the National Corporation for Industrial Studies and Promotion (SONEPI), described SONEPI, whose four main fields were market surveys; project promotion; assistance, advice and training in management and organization methods; and industrial information. The Information Department was divided into two sections, the first of which consisted of the library, which contained books, yearbooks and periodicals, while the second covered documentation and dealt with various documents, books and articles, depending on the documentary languages of the services. For several months, the Information Department had been publishing a monthly bulletin informing enterprises and government agencies of titles received, articles selected and the publication of official texts relating to industrial development. Lastly, it organized selective dissemination of information and was now preparing a listing of documentation services in Senegal. SONEPI had received the services of an expert made available to it by UNIDO.

2.11. CHAD

Mr. Ndoubayidi, Chief of Division at the Ministry of Trade and Industry, stressed the disadvantaged position of his country owing to its great distance from the sea. He described the efforts being made to attract investors, of which there were relatively few, despite the incentives afforded under the investment code. He indicated that his country provided more technical information than it received from abroad. Information on existing industries and the economic situation of the country was provided by an annual economic report by the Ministry of Trade and Industry. The report was widely and regularly disseminated abroad. In addition, the industrial profile was kept up to date. He referred to the difficulties which were encountered in collecting information from enterprises through the intermediary of Government agents. He also pointed out that there was an investor's guide in

Chad, and also the Atlas du Tchad, a cartographic document prepared by the National Institute of Human Sciences at Ndjamena. The Chamber of Commerce, for its part, published an economic information bulletin for its members. Lastly, although the Directorate for Industry received a number of documents from abroad, it was not currently able to use them to the best advantage owing to the lack of industrial information services.

2.12. TOGO

Mr. Mathcy, Chief of the Intellectual Property Division of the Ministry of Industry, and Mr. M. Ameganvi, Chief of the Economic Department of the National Centre for the Promotion of Small-Scale and Medium-Sized Enterprises (CNPPME), referred to the importance of the economic and social documentation in Togo which had been collected at the time of German colonization. An effort had been made to rationalize the information system under the first Five-Year Economic and Social Development Plan. The technical information had been supplied by the foreign investors themselves. A second Five-Year Plan, drafted entirely by Togolese cadres, had used all existing information. The various bodies set up for implementation of the plan had a large amount of information obtained through various channels on the economic environment and technology. The Directorate for Planning was in the process of reorganizing its industrial information service by scientifically classifying the documentation at its disposal and surveying and preparing a listing of the relevant documents owned by private bodies. In this connexion, the special role played by CNPPME should be mentioned.

2.13. TUNISIA

Mrs. Adda, Development Director at the Société tunisienne de banque (STB), and Mr. A. Remdhane, Chief of the Documentation Department of the National Centre for Industrial Studies (CNEI), described the industrial information situation in Tunisia. They distinguished three types of information, namely technical information, information on the economic environment and information on management techniques.

(a) **Technical information:** apart from the National Centre for Industrial Studies, there is no objective centre for information on industrial techniques. Channels for the dissemination of technical and scientific information pass for the most part through embassies, manufacturers of capital goods, consultancy offices, experts and the firms which have concluded technical assistance agreements with

Tunisian partners. It appears that these various channels entail some disadvantages, for example as regards the taking of decisions on the choice of equipment and processes. Thus, Tunisia lacks objective and impartial technical information which meets the country's needs. Special emphasis was placed on the adaptation of modern technology to the specific conditions of the developing countries.

(b) Information on the economic environment: a number of centres can supply any industrial promoter with information on the following subjects: the economic situation; industrial sectors; the legal, economic, administrative and social environment; and enterprise management. As regards the latter type of information, for example, the Société tunisienne de banque, the Central Bank of Tunisia, the National Productivity Institute and the Institute of Business Management were mentioned.

Thus, Tunisia is well equipped as regards both enterprise management and information on the economic, administrative, legal and social environment. However, a gap remains to be filled in the rational organization of channels for the dissemination of industrial information on equipment and its technology.

The technical and descriptive profiles of the following documentation services were presented: the National Centre for Industrial Studies and the documentation departments of the Engineering School, the Tunisian Electric and Gas Company, the Société tunisienne de banque, the Central Bank of Tunisia, the National Investment Corporation, the Standing Consultative Committee of the Maghreb, the National Statistics Institute, the Institute of Business Management and the National Productivity Institute.

2.14. ZAIRE

Mr. Hermu, Scientific Director, and Mr. Nguba, research worker at the Central African Industrial Research Centre (CRIAC), stressed the fact that their delegation was composed of technicians who were users of information. They described the Central African Industrial Research Centre (CRIAC). The objectives of CRIAC were to promote development and the improvement of industrial productivity in Zaire through applied research, to provide the services of its technical departments to the public and private sectors and to train cadres at various levels for the tasks of applied research. CRIAC had technical services in the following fields at its disposal: ores and metals, the agro-food industry, physico-chemical properties of materials, documentation, training and consultancy.

There was industrial documentation material in Zaïre, but it was scattered and sometimes inaccessible. There were a number of services: the State Commission for Economic Affairs, which had a library and published a number of documents; the National Industrial Promotion Office; banks, the university research institutes; and the National Statistics Institute. CRIAC's Documentation Centre had been developed to meet its own needs. It had comprehensive sets of technical works, sets of standards, books, reviews, photocopies of articles and internal documents and manufacturers' catalogues. Information was disseminated through consultation on the spot, requests for bibliographies from third parties, information bulletins, symposia and public lectures. CRIAC also edited monographs on possibilities for utilizing national resources and prepared technical industrial pre-investment studies.

2.15. ECONOMIC COMMISSION FOR AFRICA (ECA)

Mr. Zerezghi, expert in economic affairs at ECA, described the situation in the African countries with regard to services for the collection and dissemination of the information required for their industrial development efforts. He pointed out that a centre specially designed to prepare, elaborate and evaluate industrial projects was lacking. The necessity for the African countries to avoid importing large volumes of consumer goods, on the one hand, and the need to introduce import substitution with regard to capital goods on the other hand, and also the urgency of creating jobs showed that industrialization was a necessity. In order to achieve it, the African countries must have efficient and appropriate institutions in the field of industrial information which would meet the requirements of the economic and social development of each country and be suited to its structures.

2.16. CENTRE FOR INDUSTRIAL STUDIES OF THE MAGHREB (CEIM)

Mr. Mekouar, Maghreb expert at CEIM, described the activities of CEIM. Among these, note should be taken of the position assigned to documentation. CEIM collected all statistical and technological industrial documentation and also information on work of special interest to the Maghreb countries. It was responsible for their utilization and was linked to the regional and international technical and economic information network. It also prepared a publication entitled Entreprises industrielles du Maghreb (Industrial Enterprises in the Maghreb). In the context of its projects, CEIM envisaged the establishment of an inquiry service, in other words, a service for the selective dissemination of information. Lastly, it was planning the publication of a repertory of sources of information in the Maghreb, an economic yearbook of the Maghreb and a CEIM review.

2.17. AFRICAN, MALAGASY AND MAURITIAN COMMON ORGANIZATION (OCAM)

Mr. Abessolo, Chief of the OCAM Press and Information Services, placed special emphasis on the African and Malagasy Industrial Property Office (OAMPI). He explained the reasons for the setting up of the Office and, in particular, described the motives for instituting a special industrial property system in industrial establishments. In this connexion, he referred to the common industrial property system, the importance of uniform legislation, the centralization of administrative procedures in OAMPI, and the advantage of a single registration and filing system and a procedure taken care of by OAMPI.

The functions of OAMPI included reception and central filing of registrations, administrative examination and standardization of applications and declarations received, registration and issuing of official papers, publication, maintenance of special registers of patents, trademarks and industrial designs or models, the issuing of acceptances and official copies and the collection of fees.

In addition, the OCAM representative informed the participants of the decision by the Heads of State of member countries of OCAM to set up an industrial information and documentation centre at the OCAM level. He said that the lack of industrial information centres at the national level in member States and the co-ordinated industrialization programme of the member countries had given rise to the decision. The aim of the industrial information and documentation centre would be to collect, process and disseminate industrial information from the developed countries, the African and Malagasy Industrial Property Office, research centres and institutes in member States and bodies concerned with industrial matters in the member countries. OCAM had been assisted in its efforts by a mission of a UNIDO official in 1971 (Mrs. Vince, one of the organizing officers of the Seminar) and by the provision for one year of an expert in industrial information.

2.18. ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD) - DEVELOPMENT CENTRE

Mr. Dos Santos, Administrator of the Development Centre of the Organization for Economic Co-operation and Development (OECD), explained the role played by OECD, in particular the Development Assistance Committee (DAC) and the Development Centre. OECD was involved in many types of work. With regard to information problems, he mentioned the activities of the Scientific Affairs Directorate, the Information

Policy Group and the Technical Co-operation Committee for the Least Developed Countries in the OECD era. The participants were informed of several activities of the various units and committees such as the Second Ministerial Meeting on Science, and the series on the "Technological Gap". In addition, the representative of the OECD Development Centre referred to the work of the Information Policy Group, which had formulated national scientific and technical information policies and was expanding its field of activity to include social, economic and industrial information.

The OECD Development Centre was a scientific body for research on the problems of the developing countries closely associated with it. Some activities of the Development Centre in the field of information were mentioned: the former Development Enquiry Service, the preparation of the macro-thesaurus and the current research programme. The latter covered research in the following fields: economic and statistical development, technology and industrialization, social and demographic development and liaison and co-operation with training and research institutes. A full description of the activities of the OECD Development Centre was given in an information note distributed to the participants, which dealt primarily with the publications and research findings disseminated by the Centre.

2.19. NATIONAL INSTITUTE OF SCIENTIFIC AND TECHNICAL INFORMATION (VINITI)

Mrs. Souvorova, a scientific research worker at the National Institute of Scientific and Technical Information (VINITI), described her institute as the central agency of the scientific and technical information system in the USSR. VINITI's main task was to process all the scientific and technical literature published in the world and to bring out documentary publications in the form of abstract journals, bibliographical indices, information flashes, card-services, etc. As the central agency in the national scientific and technical information system, VINITI was responsible for the co-ordination and scientific and methodological management of the system in the country. In co-operation with UNESCO and UNIDO, VINITI had organized training courses on documentation and industrial information techniques.

3. INDUSTRIAL INFORMATION: TENTATIVE DEFINITIONS - USERS - REQUIREMENTS

Out of a concern for greater clarity, the participants and Seminar leaders felt it necessary to set forth a number of definitions relating to general terminology, industrial information, users and requirements.

3.1. General terminology

It was noted that information specialists require concise definitions as much as persons with no specialized knowledge in this field. The following terms were singled out for particular consideration:

<u>Information:</u>	The written, verbal or visual representation of an event, fact, situation, material object or idea.
<u>Document:</u>	The means (written, photographic, on film, etc.) by which information is transmitted.
<u>Item of data:</u>	The fundamental constituent element of information. It may be of numerical (figures, statistics, etc.) or verbal form.
<u>Information system:</u>	Set of means, methods and procedures devised for the collection, processing and exploitation of the information required by specific users.
<u>Data bank:</u>	A set of means, methods and procedures devised for the collection, processing and exploitation of data for various but as yet unspecified purposes.

3.2. Industrial information

The following general definition was offered: "Industrial information is information for use by industry or in industrialization, or information that relates to these areas".

In this regard, it was pointed out that the industrialization process is the transition from simpler methods and means of production to more sophisticated technological and scientific production methods and means, for the purpose of achieving employment, income and market objectives.

3.3. Information and decision-making

Information is the basic material for the decision-making process. The essential purpose of every decision is to transform information into action. This transformation mechanism rests on the technical, sociological and cultural background and competence of the decision-maker. It is possible for correct information to lead to an incorrect decision.

3.4. Information and training

It was noted that there is a close relation between information and the training of those who use this information. Businessmen, for example, are the main users of industrial information. Thus any action aimed at developing an industrial information system in particular should be accompanied by measures to improve the ability of users to put the information to use correctly.

3.5. Users of industrial information

Three types of industrial information users can be distinguished:

- The State or Government;
- Industrialists or industrial enterprises;
- Consumers.

3.5.1. The State or Government

Industrial information is necessary for the definition of the policies and objectives of industrial development. It is used by government officials responsible for planning and public administration in order to:

- Prepare economic and social development plans, particularly when it is a matter of defining industrialization goals;
- Advise potential national or foreign investors;
- Establish, substantiate and present State-sponsored industrial projects with a view to the necessary negotiations;
- Review needs and compare them within the framework of a changing national economic and social situation;
- Assist and encourage national firms in the preparation, presentation and implementation of their investment projects;
- Select and programme projects presented by national and foreign investors.

3.5.2. Industrialists or industrial enterprises

It was noted that several categories of users must be distinguished at this operational level of industrial development. They may be divided up as follows:

- According to size: This criterion varies from one context to another, involving large, medium, small or artisan enterprises;
- According to the method of production: For example, whether the production process is a continuous one (as in the chemical or petrochemical industry) or a discontinuous one (as in the engineering or metalworking industry);
- According to the source of the investment: Whether the promoters are nationals or foreigners, employing imported or non-imported capital, manpower and technology;
- According to the degree of completion of the industrial project: Whether an industrial enterprise is in the promotional, conceptual, initial or operational stage;
- According to the geographical site of the investment and its partial or total integration into the national economy as a whole;
- According to whether an activity belongs to the public, mixed or private sector, and takes the form of a self-contained enterprise or is dependent on a group of enterprises.

In all these cases, there are two distinct levels of information. The first level is that of pre-investment information - that is, information which will determine an entrepreneur's decision to invest or not to invest. The information required at this level involves macroeconomic and microeconomic considerations and must take full account of industrial techniques. The second level is that of current operational information - that is, information in support of the day-to-day decision-making necessary for the proper functioning of the enterprise. The information that must be available at this level concerns forecasting, management, and the evaluations of a financial, technical, technico-economic, commercial and social nature.

Between these two levels of information of decisive importance for the creation and management of business enterprises, there are also intermediate levels which bear on the various stages of project implementation. Finally, it should be mentioned that within an industrial enterprise itself the responsibilities and functions of the staff - considered individually or collectively - generate sub-levels of current operational information.

3.5.3 Consumers

The participants drew a distinction between industrial information which is of use to the buyer of a product or an item of industrial equipment and that which is sought by an agency specializing in information. Nevertheless, in both cases the quality of the product offered was stressed. In this regard, it would be well to draw attention to the relative importance that may be attached to the dissemination of industrial information stressing errors to be avoided, especially when they will jeopardize development.

3.6. Specific needs of users in developing countries

The reports presented by the participants and the discussions to which they gave rise brought out a number of special factors, among them the followings:

- The importance of distinguishing the following particular aspects from the total industrialization process:
 - Research and development,
 - Governmental decision-making,
 - Planning,
 - Pre-investment,
 - Operations.
- The fact that industrial information and industrial promotion (or industrialization) are generally linked together in an effort to prepare better project dossiers, awaken investor interest and monitor industrial development.
- The fact that the two most frequently mentioned components of industrial information are:
 - The macroeconomic component, relating essentially to the general situation of the country;
 - The technical component, relating to the search for a technology compatible with the country's needs and circumstances, in the specific area of materials, procedures or methods.
- The recognition that industrial information draws upon two principal sources:
 - Local sources: These provide information existing or developed within the country itself (for example, macroeconomic information on the country). Such information can be easily acquired.

- Foreign sources: These provide information existing or developed outside the country. The collection of such information is often difficult.
- The activities of enterprises belonging to foreigners who have no contact with the local community and who acquire information by their own means and do not disseminate it outside their own firms.
- The difficulty experienced by Governments in organizing industrial information regarding activities outside the framework of the industrialization plans.
- The limitations posed either by the language barrier or by insufficient training. These limitations narrow the field of research and the dissemination of documents. For example, only information presented in French is really accessible to the French-speaking countries of Africa.
- The suspicious attitude of users towards information systems in general, especially when information must be collected to ensure that it is received in return on a reciprocal basis.

3.7. Industrial information coverage

Based on an analysis of the various categories of industrial information users and the different information needs or types of decisions which require data support, it was suggested that industrial information should cover - more or less completely, as the particular circumstances dictate - the closely interrelated areas of interest, enumerated in the list given below (which is not exhaustive):

- Macroeconomics and environment
 - Economic policy;
 - Economic and social infrastructure: public services, energy, transport, manpower, education, training;
 - Economic geography: climate, natural resources;
 - Human geography: population distribution, growth, emigration, immigration;
 - Economic development: the economic situation, sectors.
- Microeconomics (economy of enterprises) and technical environment
 - Management, accounting, organization, publicity;
 - Cost analysis, production cost, productivity;
 - Financial problems, capital, bank loans, collection problems, financing;
 - Production organization: productivity, rationalization, maintenance;
 - Sales promotion, technical management.

- Industrial economics

World, regional and national production;

International and domestic commerce, export possibilities;

Market, consumption: supply and demand situation, customers;

Industrial organization: production and marketing patterns, subcontracting, role of small and medium enterprises.

- Industrial law

Company law;

Tax law;

Tariffs;

Industrial property;

Labour law, labour unions, wage regulations;

Industrialization policy: promotional measures, export promotion, foreign investments;

Exchange regulations.

- Technology

Procedures and techniques, adaptation to specific local conditions, machines and equipment, repair, parts, plant layout.

3.8. Limits of information coverage in the developing countries

The exact extent of industrial information coverage in a particular country depends on the kinds of users and their needs.

As an industrialization process moves according to plan through its different stages, there are corresponding changes in the scope and kind of information required, involving for example:

- The products which are of interest: raw materials, intermediate and finished products. In other words, what area of application is of interest?
- The level of technical complexity of the information sought (as in the case of techniques of production, management or design). In other words, what is the type of information sought and at what level will it be used?
- The countries or sectors covered by the information. In other words, with which country (or countries) and sectors should channels of communication be opened?

- The time required to obtain and use the information. In other words, how much time is required before a decision can be made on the basis of the information?
- The content and the form to be given to the information. In other words, what type of information (analytic or synthetic) will be most suitable, and in what form (data medium or language)?
- The objective pursued. In other words, for what purpose is the information required?
- The balance of information supply and demand. In other words, is there a supply or demand pressure?

4. CHANNELS AND SOURCES OF INDUSTRIAL INFORMATION

4.1. General remarks

The participants described a wide variety of geographical and industrialization situations. In summary, the countries represented may be classed in three groups according to the degree of their industrial development and their concern with problems of industrial information.

First group: Morocco and Tunisia, where industry plays a fairly important role in the national economy. Accordingly, these two countries have at their disposal relatively large information-gathering organizations.

Second group: Cameroon, the Ivory Coast, Madagascar, Senegal, Togo and Zaire have a number of information and industrial promotion agencies, business promotion centres and industrial research centres.

Third group: This group includes the relatively less developed countries where there is very little industry and where it would be premature, if not impossible for the time being, to develop national machinery for industrial information. The countries of this group are Burundi, the Central African Republic, Dahomey, the Niger and Chad.

Industrialization is generally regarded as one of the key factors in the economic and social development of the African countries represented at the Seminar, and industrial information is an indispensable condition of this process. Industrialization is possible only if the channels of information permit access to technical and technological knowledge so as to avoid excessive technological dependence and allow the adaptation and application of the latest methods. In other words, one must ask

- What are the most rational channels for information regarding existing techniques and technologies?
- How are channels to be established which will permit a genuine selection and purposeful adaptation of industrial techniques and technologies?

4.2. Existing channels

It became clear during the discussions and from the topics raised that there are three kinds of channels, involving individuals, enterprises and governmental and inter-governmental professional organizations.

The opinions and facts presented during the Seminar indicated that existing channels may be classified as follows:

- Unsatisfactory channels, where the routes followed and obstacles existing impede the smooth flow of industrial information;
- Relatively efficient channels, where improvements to ensure a better flow of industrial information would be possible, notably through certain measures to stimulate the transmission of information.

4.2.1. The role of individuals

The role of the personal factor in the transmission of information appeared to be unsatisfactory owing to the following factors:

- The passivity of individuals in the matter of informing themselves or others;
- Existing habits;
- The interference of certain persons or structures,
- The lack of adequate technical background;
- Faulty understanding of certain professional realities.

On the other hand, the personal contribution appeared to be relatively satisfactory in respect of:

- Human behaviour under the effect of a desire for development;
- Personal contacts, including word-of-mouth communication;
- The advancement of national personnel in the industrial development process.

4.2.2. The role of enterprises

The information flow was considered to be unsatisfactory at the enterprise level, especially in the case of:

- Foreign firms providing advisory and research services;
- Foreign production enterprises, of whatever size and place of origin;
- Foreign producers of equipment;
- Technical assistance contracts, of whatever type and origin.

The sole relatively positive factor noted in regard to the enterprise level was the role of meetings organized for local businessmen and enterprises.

4.2.3. The role of organizations

Intergovernmental or interprofessional organizations, embassies or trade missions are generally an unsatisfactory means of promoting a smooth flow of industrial information. This is true of institutions in general, especially when large volumes of data are to be scientifically or economically organized. In other words, the absence of co-ordination between the various institutions is as detrimental to the cause of industrial information as too much organization of communication.

On the other hand, it does seem that legal or regulatory measures, the creation of industrial promotion centres, the establishment of technical "listening posts" in foreign countries and the relaying function of professional organizations are relatively favourable factors in the dissemination of industrial information.

4.3. Obstacles to the dissemination of industrial information

4.3.1. Obstacles for which responsibility rests essentially with the industrialized countries

These obstacles include particularly the following:

- The problem of appropriate technologies, given the ignorance as to what these are and what they should be;
- The problem of the break-even point, which sometimes serves as a pretext for non-industrialization;
- The selection of equipment, which is hampered by the fact that only limited choices are available;
- The inadequate dissemination by the industrialized countries of industrial information (or reply data) tailored to the needs and real circumstances of the developing countries;
- The voluntary or involuntary monopoly of certain channels of industrial information;
- Constraints resulting from legislation on industrial property.

A twofold action programme is required to correct this situation - in the industrializing and in the industrialized countries.

4.3.2. Obstacles for which responsibility rests essentially with the international community

These obstacles include principally the following:

- Physical problems in communication because of unfavourable geographical factors;
- The costs of transmitting information, whatever its form;
- Inadequate means of dissemination when projects are to be publicized or replies obtained to problems raised.

A threefold effort is required to correct this situation - at the level of the industrializing countries, the industrialized countries and international organizations.

4.3.3. Obstacles for which responsibility rests essentially with the developing countries

These obstacles include particularly the following:

- Inadequate publicity given to industrialization projects in the developing countries;
- Ignorance of industrial information sources and tools on the part of technical assistants;
- Limited circulation of the reports of experts taking part in bilateral or multilateral missions;
- The partial or total absence of policies and objectives in regard to the selection of industrial information at a time when such information is becoming increasingly abundant.

These last obstacles require a twofold effort - by the developing countries themselves and by the agencies responsible for the supervision of technical assistance.

4.4. Encouraging the dissemination of industrial information

4.4.1 Development policies

Development policies are a factor in stimulating information transmission; in this field, the following might be mentioned in particular:

- The plan and statistical data, representing an information medium whose importance increases as planning becomes more general;

- Industrial promotion, in all its forms and especially when it is on a national basis;
- Applied research, the pre-eminent collector of industrial information and a potential force for adaptation and innovation in a given industrial milieu;
- National industrial engineering, a factor in the generation of industrial information channels which is of relevance to all stages in the conception, creation and implementation of an industrial project.

4.4.2. Instruments of dissemination

In accordance with their official responsibilities in their home countries and the geographical situation of those countries, the participants stressed the importance they attributed to the instruments used in the dissemination of industrial information as stimuli to communication. The following instruments were seen as capable of meeting the needs expressed:

- Telex makes possible rapid long-distance communication and facilitates sustained dialogue. It is a useful administrative management tool.
- Audio-visual techniques facilitate the dissemination of information irrespective of the degree of training of the people involved, providing their content is continuously updated. On the other hand, their use does not always improve dialogue in view of the cost of the exchange of information by these methods.
- Cartography and graphic plans in general serve to promote communication.
- Journals, published works and scientific and technical catalogues, when properly selected, spread knowledge of recent technological advances and may stimulate innovation and judicious adaptation to specific circumstances.
- Monographs setting forth different investment options facilitate the selection of projects and widen the range of industrial information.
- Sectoral studies lead to in-depth research in a given sector.
- Information source-books and yearbooks facilitate recourse to information sources and avoid wasted effort.
- Universities and research institutes are particularly valuable as instruments of information and communication, and in a given context can give technical help in regard to requests for and the supply of information.

- Patents and licences, provided their limitations are borne in mind, represent industrial information sources and channels.

These instruments were seen as stimulating both industrial information itself and the training of those who make use of it.

4.4.3. Simple, communication-oriented language

Industrial information requires language that is simple and clear. The participants discussed the ways in which this goal could be achieved. Among these, mention should be made of the following:

- The "question and answer" approach, based on one or more industrial information exchange centres functioning as information "clearing-houses".
- Meetings in the form of symposia, conferences and seminars, as well as visits to plants, etc.
- The popularization of scientific and technical knowledge, whether by people working in the field concerned, by teachers or by journalists.

4.5. Prospects for improvements in the dissemination of industrial information

The improved transmission of industrial information is found to require a number of pre-conditions.

The first of these consists in an acceleration of information exchanges.⁹ Technological progress and the exigencies of economic and social development call for a rapid circulation of information to guard against certain errors and the danger of ill-considered or imposed decisions.

In the second place, the dissemination of industrial information requires the building of confidence between sources and users, based on mutual interest. Unless such a relationship is developed, there will never be more than a "dialogue of the deaf", and an accentuation of economic and technological dependence.

The third condition calls for the replacement or reform of certain existing lines, or channels, of industrial information. Where, for example, whether such channels were set up during the colonial era or imposed by foreign investors, they must be integrated into a national industrial information system.

Finally, the smooth flow of industrial information and its potential advantages depend on the existence of a wide range of choices - that is, they are conditioned by the number of information channels available. It must be possible to verify the reliability and authenticity of the information, on the basis of a constant comparison of the data.

The prospects for an improvement in the communication of industrial information depend on the attitudes and capabilities of the individuals involved as well as on the policies of enterprises and governmental and intergovernmental institutions.

4.5.1. Attitudes and capabilities of individuals

The establishment of a communication channel by individuals may take place in different ways. A passive attitude with regard to information results in a one-way flow. The state of dependence on the source of information limits choice.

A second approach is to request the supply of a particular item of information. This is a "one-time" approach and results in the momentary establishment of channels. Here, communication depends on the supply capability of the information source to which one is seeking access, a capability which may not be adequate.

On the other hand, an active approach increases the chances of authentic information transmission. The individual determines, on his own, with or without assistance, how his information is to come to him. This gives the advantage of source selection.

Finally, each user is free to adapt the communication to his own means or possibilities; for example:

- According to professional ability;
- According to the movement of personnel.

4.5.2. Enterprise policies

The enterprise is the key point at which industrial information, through the decisions to which it gives rise, is translated into industrial operations.

The enterprise must, however, have a policy regarding internal and external industrial information which informs all its functions at every level. It can then create or improve its own communication channels. The possibilities here are many, whether in the area of negotiating with firms offering consultancy and similar services, with equipment producers or with technical assistants. In other words, when a contract

is negotiated, each provision may be written with the aim, among other things, of securing or improving industrial information. A licensing agreement or the acquisition of patent rights, for example, should take into account "know-how" factors which may not be mentioned in the documents.

A business firm may also initiate negotiations which it feels are useful and necessary following the discovery of "gaps" which offer possibilities for industrialization and which the industrialized countries may not always be able to detect on their own. In this way, an enterprise may be able to establish relations with a foreign firm based on complementarity in production and marketing rather than in capital, investment or manpower.

Finally, an enterprise may set up its information channels by making the information sources to which it wishes to gain access aware of its existence. To accomplish this, it must use every form of publicity and multiply its contacts with other firms, involving its personnel in this effort at every level.

4.5.3. Governmental and intergovernmental policies

As already indicated, industrial information policies cannot be divorced from industrialization policies. Favourable conditions for the dissemination of this information must also be created. The role of governments and intergovernmental organizations is essential in providing the necessary stimulus and encouragement. A variety of possible measures may be envisaged, including:

- The encouragement of industrial relations on a branch-by-branch rather than on a sectoral or general basis;
- The distinction to be made between international industrial information channels and foreign trade channels, either existing or projected;
- The recommendation of the most flexible possible structure for industrial information channels in order to ensure the smoothest possible flow of data;
- The publicizing, by appropriate means, of the actual information possibilities offered by the various national and international institutions for the creation or improvement of industrial information channels.

5. STRUCTURE, RESOURCES, METHODS AND PRODUCTS OF INFORMATION SYSTEMS

It should be pointed out that information systems are the sum total of the resources, methods and procedures used to collect, process and exploit the information needed by particular users. Documentation is an integral part of an information system to the extent that it is correlated with the category of users defined by the system. In other words, an information policy is based on proper analysis of information resources, the requirements of users and the objectives pursued.

5.1. National information systems

The nature of a national information system is determined by the information policy applied rather than by the structures set up. National information systems should set themselves three basic objectives:

- The recovery, inventorying and classification of the written information aids prepared in the country or dealing with it;
- Free access to information for nationals and limited access for foreigners on the basis of procedures negotiated in a bilateral or multilateral context;
- Promotion of links between users and sources of information of all types at both the national and the international levels.

5.2. Documentation units

Depending on the category of users to be informed, the necessary documentation units must be set up to serve as information policy instruments. In order to avoid duplication of effort, it may prove desirable to set up national documentation centres for individual sectors or branches of activity. The number and size of these national documentation centres depend on the information policy and objectives which it is intended to pursue and the material resources and manpower available.

5.3. Information services

As has been indicated, the users determine the objectives which an information service must set itself. It is in the interest of the information service to operate in association with the corresponding documentary unit, if any.

The primary functions of an industrial information service are as follows:

- To help industrial enterprises or organizations to make headway in the market and to facilitate their development by informing design, management and implementation personnel of existing means and methods in a given field of application with respect to technical and economic matters, scientific and technical knowledge and know-how and research findings;
- To encourage critical thinking and the selection of information which can be useful to industry, as regards not only information from publications or archives of scientific research findings, but also those from any qualified source whatsoever (in particular as regards know-how), available in the country or abroad;
- To improve and develop methods for actively approaching industrial circles and establishing confidence and contact, which promotes the flow and utilization of information.

5.4. Cost of information

Information in general and industrial information in particular can be evaluated only in terms of relative costs. It is therefore difficult to predict or evaluate the break-even point or profitability of information. To estimate cost, it must be viewed in a given context and in the light of the industrialization objectives being pursued.

The costs determined for collection and research on the one hand and processing and dissemination of information on the other account only for marginal costs in a situation in which it is impossible to know all the advantages and disadvantages without medium-term and long-term evaluation of the results of industrialization.

The customary evaluations deal primarily with the costs applied to the production, processing and dissemination of information aids in the form of text or figures or specific studies or research which do not take into account the cost of the sum of information which has gone into them.

The cost of an industrial information service is an integral part of industrial investment, with the exception of the operating costs relating to research, analysis and the dissemination of information.

5.5. Information users and professions

As was seen above, industrial information is a sum total of functions which are closely related to the industrialization process and to the objectives assigned. In general, these functions - archivist, librarian, documentalist, information analyst, electronic data processing specialist, engineer, technician, skilled labourer, etc. - are complementary, but need not be used all at the same time.

Industrial information should really be sought out and analysed by all those who use it - in other words, by all those who participate in industrial development. This ideal situation is no more realistic than the full centralization of industrial information.

The application of a policy of industrial information involves the definition of training objectives based on a profile which must be adapted to each situation and can be described more or less as follows:

- Familiarizing oneself with the structure of industry in the region in which one is working, in order to gain a knowledge of the industrial sectors and branches, the size of enterprises and their geographical location;
- Being personally acquainted with each enterprise in a given sector or branch, knowing its commercial and technical activities, its administrative structure, its cadres and the qualifications of its personnel, in order to receive information and translate it into practical and appropriate results;
- Familiarizing oneself with the structure of suitable institutions able to contribute to and assist in the development of the various industrial sectors and branches; these may be institutions concerned with education, training and research; libraries; documentation units; public authorities; and professional associations, in the country or abroad;
- Having detailed knowledge of the enterprise using industrial information, gained in particular through discussions with the management and members of the personnel, in order to identify information and other needs;
- Assisting in formulating problems and preparing requests for assistance and eliciting requests for information;
- For a given problem, identifying and analysing channels and sources of information which may meet the demand with a reasonable minimum waiting period;
- Ascertaining that the service is rendered in an appropriate manner and that the action taken is understood, adapted to needs and translated into practical results;
- Identifying fields of and demands for training, meetings, exchanges of experience among enterprises and among industrial branches through the industrial sectors in a given region in order to improve the information of the enterprises concerned;
- Evaluating and providing programmes suited to requirements for this type of training;

- Organizing visits to plants, research centres and information services, exhibits, etc., in order to supply information suited to the demand and in keeping with the experience of the participants;
- Being aware of the available industrial information resources in the given field, thus making possible efficient and rapid orientation towards appropriate sources in the country or abroad;
- Participating in building up a fund of industrial information in the field concerned, for example by supplying data for the evaluation, improvement and development of the programme and of suitable industrial information methods.

In view of the different functions which go to make up a fully coherent industrial information system, the education and training of persons participating in and using information services must be carried out in a suitable manner, in the more general framework of industrial development.

5.6. Industrial information methods

Industrial information methods are based on a combination of the techniques of documentation and the dissemination and collection of information on the one hand and industrial technologies on the other. This combination is more or less flexible depending on the objective which it is desired to achieve. Industrial information methods evolve and develop.

5.6.1. Documentary techniques

These techniques relate to the collection, classification and dissemination of documents. They make it possible to locate, retrieve, select, catalogue and index written information aids.

These techniques are based on a documentary language using descriptors or key words which make it possible to describe the apparent contents of a primary or secondary document.

The preparation of thesauri (or lists of descriptors) makes it possible to rationalise the documentary language for the benefit of those who have contributed to its elaboration, on the condition that they are co-ordinated with descriptors in the branch and sector a part of whose documentary language is to be described.

Lastly, documentary techniques may be more or less sophisticated and make use of manual methods (e.g. file cards), semi-manual methods (punch cards) and computers.

5.6.2. Techniques for the collection and dissemination of information

These techniques depend on the channels and sources used (see above). It must however be pointed out that "data or information banks", an expression which has gained great currency in recent years, are an objective (or an end in themselves) rather than a method strictly speaking.

Lastly, it must be recalled that among the methods of collection and dissemination of information, the simplest one is that of replying to a specific inquiry.

5.6.3. Industrial techniques

Each enterprise, each branch and each sector of industry has its own methods of design, implementation and management. Industrial information is closely tied to this fact. The specific "know-how" of the user and the "supplier" of information therefore determine the industrial information methods in general and often other techniques which will be used.

5.7. Contents of industrial information

As has been pointed out, the contents of industrial information are complex, and draw upon all the implementation stages in industrial development. It is simply a flow of information dealing with knowledge and know-how with respect to a given product.

In order that this flow may supply adequate information for a transfer of technology, it must be broken down by type of information for a given product so that the desired elements of information making it possible to take the appropriate decision in a given context can be available.

Lastly, this flow should make possible a check on validity and reliability by comparison with other sources and channels.

6. ROLE OF UNIDO AND OTHER INTERNATIONAL ORGANIZATIONS WITH REGARD TO INDUSTRIAL INFORMATION FOR THE DEVELOPING COUNTRIES

The objective of UNIDO, which was founded in 1966 by a resolution of the United Nations General Assembly, is to promote and accelerate the industrialization of the developing countries.

The Group of High-Level Experts entrusted by the United Nations General Assembly with the task of defining medium-range and long-range strategies for UNIDO recommended, inter alia, in its report that:

"UNIDO should develop, through the compilation, analysis and dissemination of

information concerning various aspects of the process of industrialization available within and outside the United Nations family from all countries, its functions and further its role as the principal clearing-house of industrial information within the United Nations system.

"For this purpose, UNIDO should:

- (a) Strengthen, within the framework of its general activities, its abilities to provide industrial information and know-how (in addition to its Industrial Inquiry Service and other existing information schemes);
- (b) Expand the UNIDO-centred network of industrial information correspondents and further the activity of the industrial information clearing-house on a multilateral exchange basis;
- (c) Assist in the development and strengthening of industrial information centres in developing countries;
- (d) Expand its information activities in the field of transfer and adaptation of technology by directing developing countries to the appropriate sources of all relevant information and by compiling evaluations of existing technological choices."

Between these two objectives which are an integral part of the industrial development strategy, what is now UNIDO's role in co-operation with other international organizations in the field of industrial information?

6.1. Organization of UNIDO

The UNIDO Secretariat consists of four substantive divisions: the Technical Co-operation Division, which is responsible at a geographical level; the Industrial Technology Division, with sectoral competence; the Industrial Policies and Programming Division, with political and economic competence, and the Industrial Services and Institutions Division, of which the Industrial Information Section is part.

The Industrial Services and Institutions Division helps to establish the infrastructure required by way of official services in the competent ministries, planning, patent and licensing offices, training centres, chambers of commerce, fairs, etc., and - which brings up to our subject - industrial information centres. It is a matter of services and institutions, and the Industrial Information Section thus assists in the establishment of institutions in its field of competence and provides services.

6.2. Assistance in the establishment and promotion of industrial information services

The primary task of this Section is to promote the establishment or adaptation of industrial information centres in the developing countries. In one form or another, UNIDO has since its inception been called upon to initiate and support many local activities in this regard. In order to promote initiative, UNIDO has organized a series of seminars which are held each year in a different part of the world and which bring together persons responsible for documentation centres or officials working in ministries responsible for industrial affairs. The purpose of these meetings is to persuade participants of the value of establishing or adapting structures which will enable local operators and investors to draw from a central collection of knowledge culled from the most diverse sources around the world, the adequate flow of which cannot be ensured without proper co-ordination. Seminars of this type were held in 1970 in Teheran, Iran, in 1971 in Lima, Peru, in 1972 in Addis Ababa, Ethiopia, and now in 1973 in Rabat, Morocco. The interest sparked by these meetings was reflected in an increase in the number of requests for assistance received by UNIDO during the months following the meetings from countries which had been represented, concerning the establishment or adaptation of industrial information centres.

Another form of direct contact, at the level not of those responsible for setting up information centres or heads of existing centres, but of the personnel intended to operate these centres, is provided by training courses for industrial documentation officers which last several weeks and are organized annually in co-operation with UNESCO under the auspices and with the assistance of VINITI in Moscow. These courses are given each year alternately in English, Spanish and French; many participants have since become regular correspondents of the UNIDO Industrial Information Clearing-House and some of them are directors of national centres.

Whether at seminars for senior officials or courses for personnel, UNIDO concentrates its efforts on focussing awareness on the specific needs of industrial enterprises - whether in existence or at the planning stage - which can be identified only by contact with authorities and operators themselves. The location, definition and satisfaction of precise information needs must have priority over any documentary compilation which can at best provide only an incomplete solution. This concept of the function of the industrial information centre is very widely accepted and is reflected in the requests received by UNIDO for services other than seminars and training courses.

Industrial information services being set up or re-structured turn to UNIDO for the provision of expert services: the entire staff of certain centres which are particularly noted for the high standard of their external relations would not be sufficient to meet the requests for expert missions of varying duration received by UNIDO. The same is true of requests made to UNIDO for training for the staff of newly established documentation services.

So far as equipment (particularly duplicating equipment) is concerned, UNIDO has been able to provide assistance to many information centres in the developing countries. It has extended its efforts to the audio-visual field, giving notice of the availability of many films containing industrial information.

6.3. Exchange of industrial information

6.3.1. Industrial Inquiry Service

National, regional or sectoral industrial development centres should become the point of convergence of information required by local industries and make themselves able to satisfy their needs directly; in the meantime, however, this can be done only through direct international assistance to inquirers themselves.

International assistance to the developing countries in the industrial information field is in principle and intention available in abundance; its transfer, however, remains to be organized. The role of the OECD Development Centre and of UNIDO in this field is well known; the inquiry services of both organizations have gradually distributed responsibilities between themselves over the years until the point now marked by the transfer of the Inquiry Service of the OECD Development Centre to the Society for International Development (SID).

In connexion with this transfer, a very substantial fund of documentation on industrial questions, which for a long time previously had been dealt with by OECD, was transferred to UNIDO and, with the delimitation of the fields of responsibility between UNIDO and the SID in this respect, questions concerning industrial information are assigned from now on exclusively to UNIDO.

The UNIDO Inquiry Service thus receives from all developing countries questions relating to all possible aspects and stages of industrial development - questions of interest to industrial development ministries in formulating plans, or heads of industrial enterprises desiring information to improve the operation of their factories, requests for rudimentary descriptions of industrial processes or for information on new breakthroughs in certain advanced technologies.

The information requested from UNIDO is not available there in a pre-assembled encyclopaedic form. The role of the Service is to tap existing sources of information and transmit this information to inquirers. Sources of information are concentrated mainly in the industrially advanced countries but may also be, and to an increasing extent are, found in the developing countries themselves. They are national or sectoral industrial information centres, industrial enterprises or professional organizations, which supply the answers requested in the form of photocopies, articles, reports, tailor-made studies or merely indications of new sources.

UNIDO has modest funds provided from certain voluntary financial contributions to reimburse its correspondents for certain expenditures involved in research, but a large proportion of the replies are given free of charge. The staff assigned to this service was for a long time very small. This left little scope for contact with inquirers, on the one hand, with a view to obtaining more clearly formulated questions, and sources of information, on the other, in order to explain what was expected from them and from the suppliers of information. A great effort is being made to improve this service. This has been rendered possible with a slight increase in staff. Attached will be found copies of the form sent to inquirers and the questionnaire sent to the members of the network of correspondents.

6.3.2. Information service on equipment

In addition to the service of ad hoc replies to a very broad range of questions on technologies, markets, industrial management, etc., the UNIDO Industrial Information Clearing-House has been given a new task concerning industrial equipment. Various considerations underlie this second category of activities.

Nothing would be gained by continuing to untie development aid, with donor Governments no longer requiring recipients to purchase equipment from the donor country alone, or by diversifying trade opportunities through the relaxation of internal constraints in each of the monetary blocs and moving towards the all-round convertibility of funds available for the acquisition of equipment, if the purchasers of capital goods did not take advantage of this to widen their search for new equipment.

There would be no gain in accumulating experience on the good or poor adaptation of particular industrial equipment to local climatic, economic, labour, transport, market or other conditions in a given developing country if it could not be turned to account in other developing countries where partially or wholly similar conditions prevail.

Lastly, there would be no gain in promoting the development of industries exporting capital goods or even original technology from the developing countries if these new products, often admirably suited to local conditions, were not given access to the international capital goods market.

The UNIDO Industrial Information Clearing-House has been invited to mount a special effort in this area of concern.

This particular activity is currently being set up and will be reported on as progress is made.

6.3.3. Information service on firms offering consultancy and similar services

The Industrial Information Clearing-House also has a very detailed list of consultant firms which have gained experience in the developing countries and are willing to offer their services.

6.3.4. Selective dissemination of Information

The services of the Industrial Information Clearing-House are of course available to the staff of UNIDO itself, whether stationed at headquarters in Vienna or posted to the main developing countries. The most clearly useful type of service is the selective dissemination of information (SDI) on users' profiles - the processing, reproduction and distribution of relevant textual material contained in the publications, reviews, reports and documents of all kinds received by the UNIDO Library. It is anticipated that this service will eventually be extended to selected national information centres: at least it provides training in this exercise for trainees from these centres.

6.3.5. Publications

The Industrial Information Section also offers services through its publications. The UNIDO Newsletter is a monthly publication which, as its name suggests, provides news on UNIDO's main activities, expert services required, examples of questions sent

to the Industrial Inquiry Service, information on assistance sought by enterprises in the developing countries or offered by firms or industrial organizations around the world, on the orders placed and contracts signed by UNIDO, etc. The Newsletter is currently sent to approximately 12,000 recipients classified, like the industrial consultants referred to earlier, according to their speciality and field of interest. As UNIDO is given the possibility of distributing its own publications directly, this means of locating the readers who are primarily concerned will become fully effective.

Another publication is the Industrial Research and Development News (IRDN) - a magazine which is issued every two months. This review is basically a means of exchanging experience on cases of successful industrialization in different fields in the developing countries. UNIDO's industrial information publications programme also includes such series as the Industrial Development Abstracts summarizing the contents of all UNIDO documents and publications according to the terminology of the Industrial Thesaurus, itself aligned with the macro-thesaurus published several years ago by OECD and known to everyone.

6.3.6. Guidance to sources

The series Guides to Information Sources has been extremely successful. Each of these guides contains, for a given sector of industry, a list by country of professional organizations, research centres, learned societies and specialized information services, a list of the yearbooks concerning the sector, sources of statistics and other economic data, a list of basic works, periodicals, bibliographies etc. The series includes guides to information sources on the meat-processing industry, the cement industry, the leather and leather goods industry, the furniture and joinery industry, the foundry industry, etc., with more to follow. A manual on the use of audio-visual techniques is under preparation. It is also intended to publish a summary account of the operation of industrial information centres in developing countries.

6.4. Integration of the international information system with the world information system

It is clear that communication is possible only if there is a common language and a world network to permit its circulation.

Accordingly, UNIDO is following with great interest the efforts made by UNESCO through the UNISIST system and programme in which it participates.

Furthermore, UNIDO is following the work of the OECD Development Centre, now assumed by the Society for International Development (SID), to promote "question and answer" services in all areas of economic and social development. It hopes that these efforts may eventually lead to the transfer of clearing-house responsibilities to the specialized agencies of the United Nations system, as has been done in the case of UNIDO by the OECD Development Centre.

Lastly, having participated in the preparation of the macro-thesaurus, which was published in five languages, UNIDO hopes that this task, formerly entrusted to the OECD Development Centre, will be continued under the auspices of the United Nations system.

7. RECOMMENDATIONS OF THE SEMINAR

Recognizing that there can be no industrial development without information and documentation on technology, the management of enterprises and their economic environment, the participants in the Seminar have drawn up the following recommendations:

RECOMMENDATION NO 1 - RESPONSIBILITIES OF GOVERNMENTS

1. The Governments of the countries concerned should assume responsibility for the transfer of information required for the development of industry to the same extent and in the same spirit as they assume responsibility for industrial development itself. They should endeavour to imbue the various economic agencies operating in their countries with the same sense of responsibility.

1.1 In establishing or strengthening industrial information and documentation services, Governments should, where possible, integrate them with existing structures;

1.2 With regard to the orientation to be given to industrial information and documentation services, priority should be given, in the first instance, to the collection and dissemination of information which might provide guidance on the establishment of new industries and promote the development of existing ones;

Both the form and content of industrial information and documentation should be suited to the technical, economic and social conditions of each country;

1.3 The Governments of the countries concerned should ensure that permanent relations are established between their information and documentation services, in order to facilitate the distribution of all industrial information. They should consider the possibility of establishing regional networks to develop exchanges;

1.4 The Governments of the countries concerned should take advantage of the opportunities afforded by bilateral and multilateral assistance agencies, including UNIDO, in the field of industrial information, in the form of both direct services and the establishment of national and regional industrial information and documentation services;

1.5 Where there is no established structure, Governments should form groups of national specialists who have a firm grasp of the requirements and functioning of information systems in their country or region, in order to facilitate the work of visiting missions to the greatest extent possible;

1.6 Each country should take steps to ensure effective co-ordination between the various ministerial departments and public or semi-public bodies responsible for the planning of requests for technical assistance in the field of industrial information and documentation;

1.7 In view of the growing requirements for industrial information and documentation, the participants feel that priority should be given to the training of information users and personnel. In this connexion, it is desirable that the countries concerned should be in a position to benefit from the experience already gained by some of them.

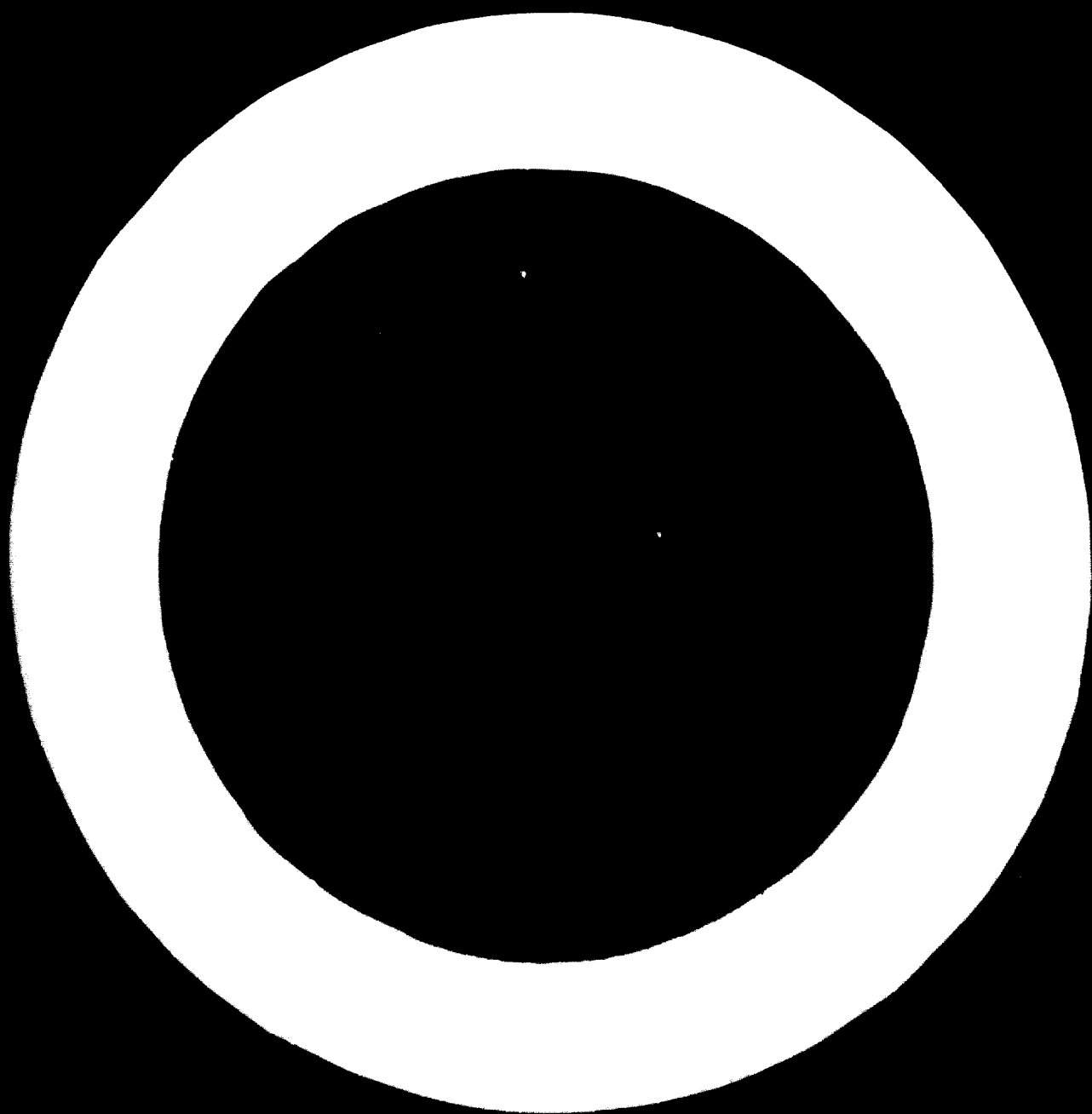
RECOMMENDATION NO 2 - ROLE OF UNIDO

2.1 The participants have taken note of the objectives of UNIDO's medium-term programme, including its role as an industrial information clearing-house which aims in particular to promote the establishment of direct contacts between suppliers and users of industrial information, and they recommend that UNIDO should:

- 2.1.1 Give due attention to this important activity;
- 2.1.2 Mobilize its technical resources to assist in the formulation of clear and relevant questions and reply data;
- 2.1.3 Promote the development of national or regional "relay systems" for these activities;
- 2.1.4 Assist in the establishment of national or regional industrial information and documentation centres.

2.2 In view of the value of meetings on industrial information and documentation on the one hand, and the importance of the subjects discussed at previous seminars on the other, the participants recommend that, basing itself on the views expressed, UNIDO should prepare, in collaboration with persons from the countries concerned, a synthesis which could serve as a practical industrial information guide.

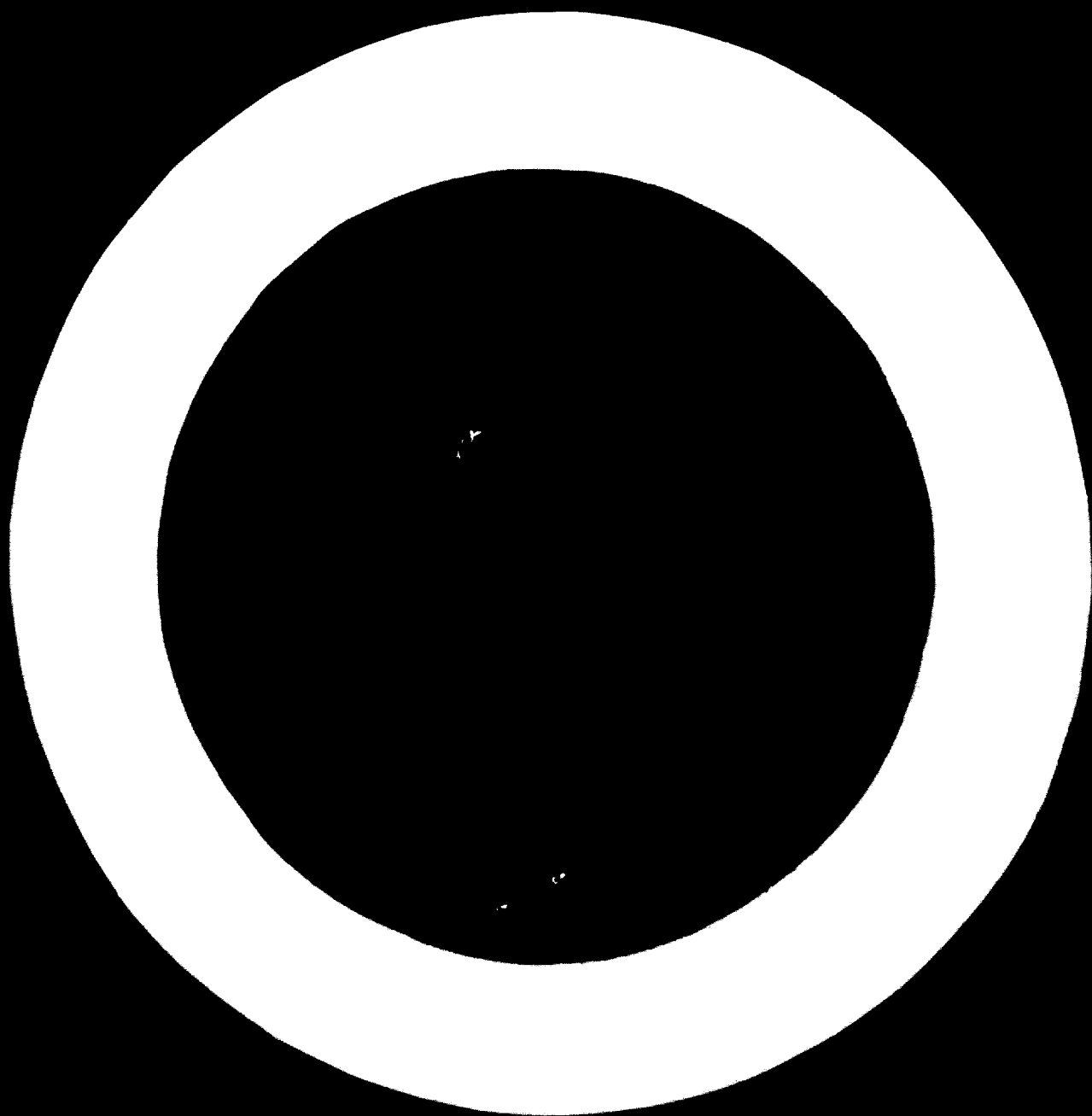
2.3 Bearing in mind the fundamental importance for the developing countries of the appropriate choice of industrial equipment, the participants recommend that the UNIDO programme in this field (ACE) should be designed to ensure that it does not become an instrument of technological dependence and that it will permit an objective evaluation of the capacity of equipment to meet the real needs of the developing countries.



ANNEX 1

LIST OF DOCUMENTS SUBMITTED TO THE SEMINAR

ID/WG.143/1	Ordre du jour provisoire annoté (Séminaire sur l'information industrielle), Rabat (Maroc)	F
ID/WG.143/2 (ID/WG.119/7)	Etat des services d'information industrielle dans certains pays africains (Séminaire sur l'information industrielle), Rabat (Maroc)	F
ID/WG.143/3 (ID/WG.119/8) et Corr.1	L'information et l'industrialisation en Afrique (Séminaire sur l'information industrielle), Rabat (Maroc) L'information et l'industrialisation en Afrique (Séminaire sur l'information industrielle), Rabat (Maroc)	F F seulement
ID/WG.143/4 (ID/WG.119/9)	Projet de création d'un service d'information	F
ID/WG.143/5 (ID/WG.119/10)	L'amélioration de l'information industrielle sur le marché africain : données et tendances	F
ID/WG.143/6 (ID/WG.119/11)	Répertoire des organismes à contacter en vue de la promotion des investissements pour l'industrialisation de l'Afrique	F
ID/WG.143/7	Training of industrial information officers in developing countries	F



HOW TO USE THE REQUEST FORM

Fill in the REQUEST FOR INFORMATION and send it to the following UNIDO address:

Industrial Inquiry and Advisory Services
P. O. Box 707
A-1010 Vienna
Austria

DESCRIBE YOUR PROBLEM as completely as possible, giving precise details. Keep in mind that our answer to your inquiry depends very much on the quality of the inquiry.

WELL FORMULATED INQUIRIES SHOULD

INCLUDE The Subject or Field of Application - please limit to one product, service, process, activity, etc.

The Type of Information Wanted - what do you want to know - technological processes, vendors, markets, costs, sources, adaptation, manpower and training, etc.

INDICATE Desired Form of Replies - do you want bibliographies, documents, articles, statistical reports, brief surveys, catalogues, reports, industrial profiles, expert advice and/or recommendations, addresses, etc.

STATE The Basic Data - include the qualitative and quantitative data needed to understand your problem, such as raw materials availability, production capacity, initial capital investment, etc. If necessary, include explanatory notes and documents on technical, economic and social factors involved.

INDICATE The Reason - you are asking the question and what you hope the answer will do for you.

STATE Other Sources - you have already contacted or have readily available to you.

REQUEST FOR INFORMATION

Inquirer's Name:
Address:

BRIEF STATEMENT OF YOUR QUESTION

Subject matter or field of application

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Type(s) of information wanted

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Desired form(s) of reply(ies)

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Basic data for the problem

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The aim of the question and the result(s) you hope to achieve

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Other source(s) of information already contacted

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Date: Signature:

**UNIDO ORGANIZATION FOR INDUSTRIAL INFORMATION
THE INDUSTRIAL INQUIRY SERVICE**

UNIDO established the Industrial Inquiry Service in 1968 to provide industrial information to developing countries, in response to their many inquiries.

These inquiries cover every industrial area. Approximately 50% concern technical know-how and technologies, 20% have to do with markets and statistical data, 20% are about machinery and equipment, the remainder deal with finance, training, manpower, etc.

To answer the more than 2,000 inquiries from developing countries each year, the Service has an international network of correspondents from 30 countries comprising more than 200 organizations, institutions, enterprises and individuals. These correspondents are themselves sources of information or links to such sources.

.... If you or your organization would like to further help the developing countries by becoming one of our correspondents, please complete the attached questionnaire and return it to UNIDO. We will evaluate your qualifications and shortly begin sending you inquiries in those fields you designate.

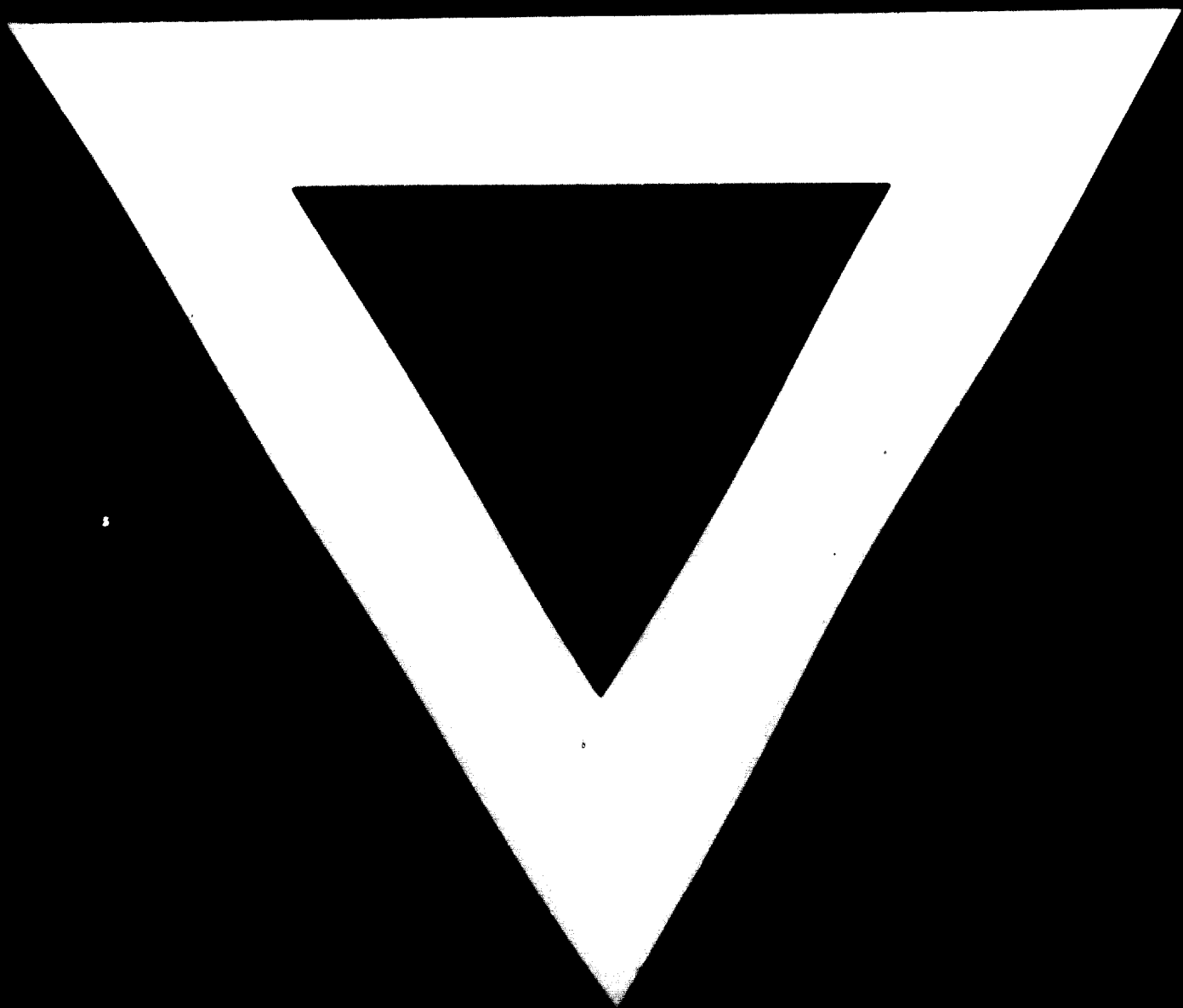
TYPE OF INFORMATION YOU CAN PROVIDE

- "Tailor-Made" Technical Reports
- Copies of Existing Technical Reports
- Copies of Specialized Articles
- Bibliographies
- Statistics
- Commercial Catalogues/Pamphlets
- Other (Indicate)

REMARKS:

DATE _____ SIGNATURE _____





74.09.13