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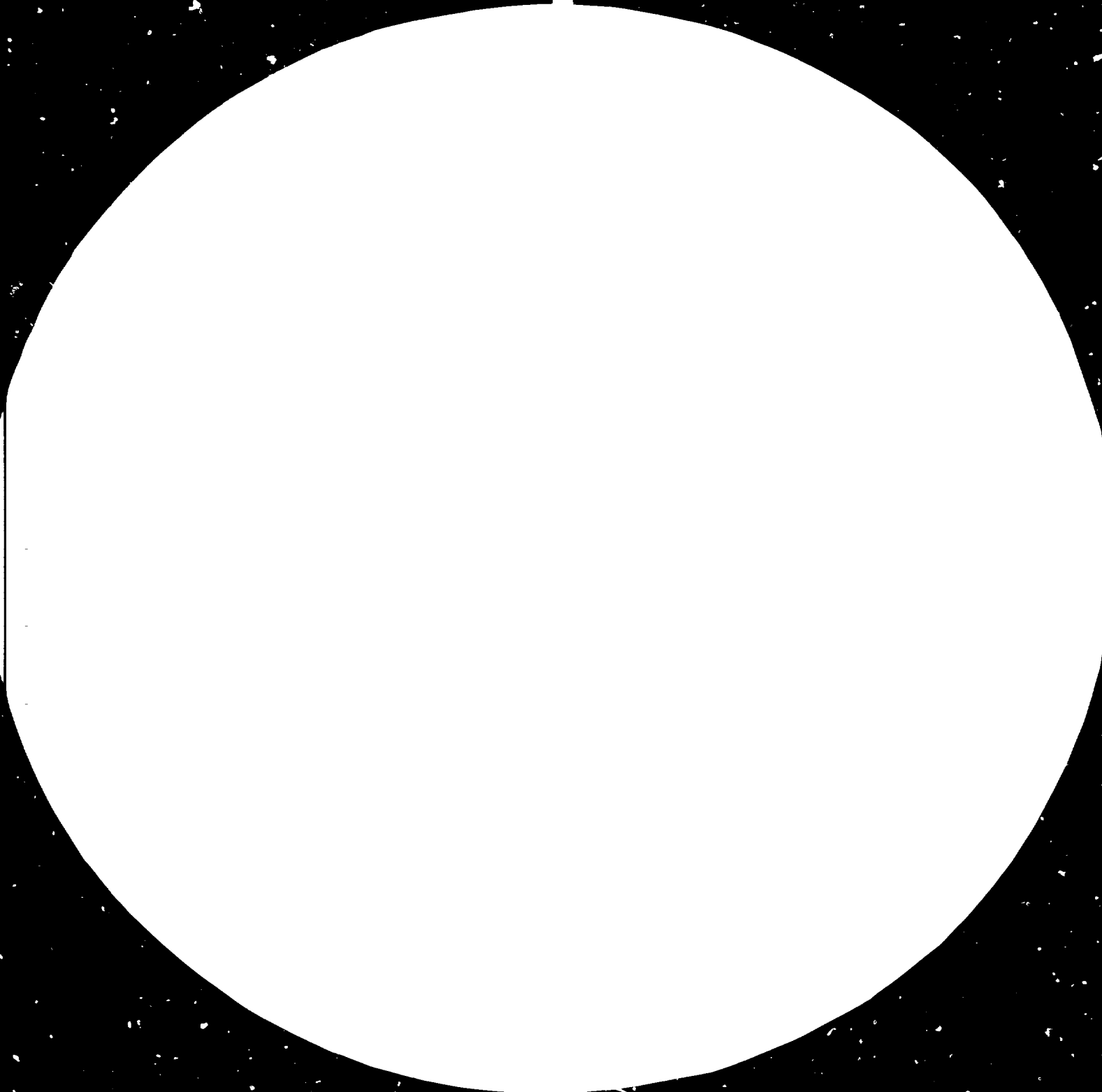
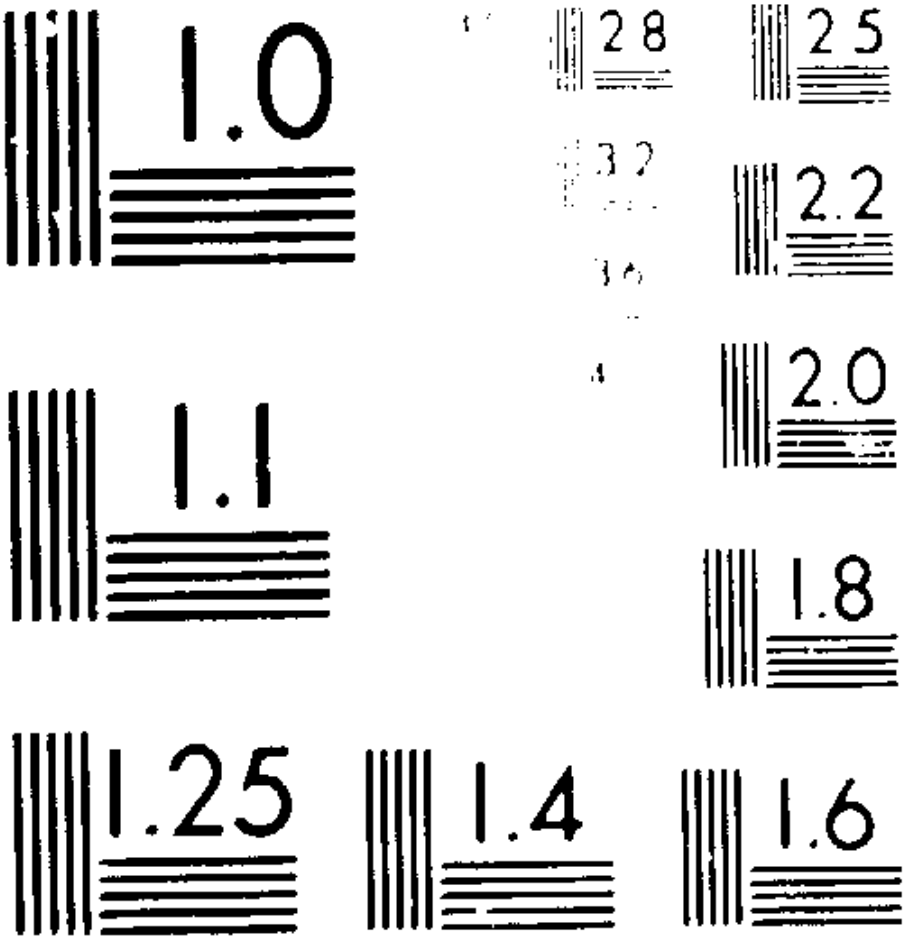
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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CO-OPERATION AMONG ISLAMIC COUNTRIES FOR THE DEVELOPMENT OF CAPITAL GOODS INDUSTRY **

A. Suggestions on an action-oriented programme: Summary.

B. Analysis to an action-oriented programme.

Prepared by

Yvon le Moal

* This is a revision of a document previously issued as UNIDO/ICIS.94.

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A. Suggestions on an action-oriented programme: Summary

Four basic issues are proposed in order to promote during the next two years the first steps for co-operation among Islamic Conference Members in the capital goods industry:

I. Survey of the engineering industry in the Islamic Countries.

II. Implementation of new means and procedures in view to facilitate trade of capital goods among Islamic Countries.

III. Expansion of co-operation among Islamic Countries for capital goods production related to their basic needs.

IV. Consultations among Islamic Conference Members in order to select and develop strategical capital goods with a co-operative approach.

Each basic issue may be implemented by some specific operations to be developed:

with the Islamic Conference Secretariat,

with Islamic ad hoc Institutions (existing as well as new),

within certain UNIDO and other United Nations Bodies' projects/programmes,

with UNIDO assistance, if asked.

I. Survey of the engineering industry in the Islamic Countries

Operations (1) Inquiry about the actual and the projected capacities and abilities of the heavy engineering industry in Islamic Countries.

(2) Evaluation of capital goods' demand by processing industries among Islamic Countries up to 1990.

Operators: Islamic Conference Secretariat

SESRTCIC and IDB

various Islamic ad hoc institutions

UNIDO assistance if asked

II. Implementation of new means and procedures in order to facilitate trade of capital goods among Islamic Countries

Operations (3) Development of an IDB ad hoc department.

(4) Implementation by IDB ad hoc department of

a pre-qualification procedure for tenders,

an Islamic quality label for Islamic engineering products,

new financial schemes for improving exports of capital goods among Member-countries.

(5) Expansion of new IDB foreign trade financing facilities.

(6) Consultations among Islamic countries about the future of their tariff barriers among themselves related to capital goods exchange.

(7) Consultations with Islamic Insurance and Reinsurance groups in order to facilitate new trade of engineering products and services among Islamic countries.

Operators: Islamic Conference Secretariat

IDB

multilateral and bilateral consultations

UNIDO assistance if asked

III. Expansion of co-operation among Islamic countries for capital goods production related to their basic needs

Operations (8) Special emphasis during the next "Solidarity Meetings" for Sudan, Upper Volta and Mauritania.

(9) Follow-up of the First ECA/UNIDO Basic Metals and Engineering.

(10) Specific consultation meetings among Islamic countries.

Operators: Islamic Conference Secretariat

Follow-up Committee on Industrialization in Africa

UNIDO

multilateral and bilateral co-operation

IV. Consultations among Islamic Conference Members in order to select and develop strategical capital goods with a co-operative approach

Operations (11) Technico-economic evaluation and choice of a first group of long-term strategical capital goods for Islamic Countries.

(12) Evaluation of various co-operative procedures to develop these engineering products by an ad hoc Committee of the Islamic Conference.

(13) Signature, ratification and implementation by Islamic Conference Members of the Agreement on Protection and Guarantee of Investments in Member States.

(14) Evaluation of the obstacles related to different standards among Islamic Countries.

Operators: Islamic Conference Secretariat and ad hoc Committee

SESRTCIC and IDB, with the participation of ad hoc Islamic Institutions

multilateral and bilateral consultations

UNIDO assistance if asked

B. Analysis to an action-oriented programme

INTRODUCTION

The New International Economic Order cannot be based on a continuation of the present international division of labour. The Lima Declaration makes various recommendations aimed at greatly increasing industrial production in the developing countries and thus breaking away from the rhythms observed in the past.

The 25 per cent goal of the Lima Declaration is the general expression of this desire for change. But it is clear that the participation of the various industries in attaining this goal will take different forms depending on their present situation and the conditions they have to meet in order to accelerate their growth in the countries of the third world.

The capital goods industry is one of the industries in the developing countries, the production of which will not equal 25 per cent of world production by the year 2000. One UNIDO study estimates that this percentage will be 15 per cent (at maximum).

There are various factors which explain the times required for the future development of this industry in the developing countries. The present situation in particular will explain the handicaps with which the developing countries have to contend; in particular the position of the Islamic countries may be described as follows:

No Islamic country has yet been able to develop the basis for a powerful capital goods industry in spite of the past efforts of certain countries;

On the other hand, imports of capital goods [1/] by the Islamic countries as a whole are becoming a calculated risk for the development of these countries (e.g. by increasing their international indebtedness), as well as for that of the industrialized countries which count on export markets in capital goods to restructure their productive machinery;

The mass (in volume and value) of imports of capital goods by the Islamic countries will probably not decrease in the future unless special attention is given to this industry.

1/ 7 per cent of world trade in capital goods in 1970; 16.1 per cent in 1976.

Taking into account these elements, the objectives of this report are as follows:

Chapter I: To show that large-scale industrial developments in the processing industries may as well encourage as handicap the growth of the infant Islamic engineering industry;

Chapter II: To propose a first evaluation of the state-of-the-art of the current efforts being made by the Islamic countries to develop this industry in order to promote the idea of an inquiry into their actual capacities and their projects, and to develop an exchange of experiences among Islamic countries;

Chapter III: To evaluate elements to be developed in view of new co-operative schemes in the design, production and trade of capital goods among Islamic countries.

Chapter I

MAJOR INDUSTRIAL PROJECTS: OPPORTUNITY FOR, OR OBSTACLE TO, THE DEVELOPMENT OF CAPITAL GOODS IN THE ISLAMIC COUNTRIES

Since the Islamic countries have opted for a sizeable development of their basic industries, it is pertinent to estimate the effects of this choice on the needs of these countries for capital goods.

To facilitate this analysis, five products have been selected:

The atmospheric distillation of crude petroleum in refineries (first phase of refining);

The production of ammonia, the basis of nitrogenous fertilizers;

The production of ethylene, the basis (for technical reasons) for the production of the other olefins (propylene and butadiene) and the principal raw material for plastics and many other chemical products (e.g., chlorinated solvents and polyester synthetic fibres);

The production of prereduced iron ore, connected with the industrial use of natural gas;

The production of crude steel to supply rolling mills for the manufacture of flat products (e.g., sheet metal for the automobile industry or shipbuilding) or long products (e.g., rods for reinforced concrete or rails for transport facilities).

The field of investigation could be widened. Other activities such as, for example:

NGL and LPG;

aluminium;

cement;

phosphoric acid (the basis of phosphate fertilizers);

electricity (high power and mini-hydroplants, distribution net);

sea water desalination units;

synthetic fibres;

sugar and grain mills

could be studied by identifying and estimating their annual demand to the engineering industries.

A quick analysis of the five products selected reveals the importance of systematic work of this type to evaluate the possibilities for co-operation between Islamic countries in manufacturing capital goods.

Table 1 gives a summary of the projects (number and total annual capacities) subdivided as follows:

Projects now under way, during the last years (1978-1980);

Projects after 1980, i.e. 1981-1985;

Among the latter, projects after 1985. 2/

Table 1. An attempt to evaluate industrial projects for certain branches of production in the Islamic countries

	Refinery for atmospheric distillation	Ammonia	Ethylene	Sponge iron	Crude steel
Projects 1978-1980	N a/ = 12	N = 15	N = 4	N = 5	N = 6
	71.6 MT/yr b/	4,200 TT/yr c/	870 TT/yr	4.1 MT/yr	6.45 MT/yr
Projects after 1980	N = 15	N = 27	N = 17	N = 17	N = 28
	80 MT/yr	7,200 TT/yr	7,200 TT/yr	15.7 MT/yr	48.1 MT/yr
Including projects after 1985	n.a. d/	n.a.	N = 10	N = 7	N = 12
			3,570 TT/yr	6.7 MT/yr	25.6 MT/yr

a/ N = number.

b/ MT/yr = millions of tons per year.

c/ TT/yr = thousands of tons per year.

d/ n.a. = not available.

In light of this, we should emphasize the wide scope of the industrial process undertaken by the Islamic countries. For example, in the five branches of production under consideration:

2/ The particulars of any project are of necessity tentative; time alone will permit a correct evaluation. This fact should be taken into account when considering the figures given in table 1.

42 major projects were implemented since 1978;

Another 104 operations will be undertaken after 1981.

Considering that these projects will require:

Upstream infrastructure, such as:

Pumping, compression and storage stations for crude petroleum;

Production of electric power for the five manufacturing processes;

Production of process water, partially from desalinated sea water, partially from pumping stations, etc.;

Downstream processing factories, such as:

Factories for manufacturing plastics;

Hot and cold rolling mills for crude steel; etc.,

an evaluation of their impact on capital goods requirements must cover a relatively wide field in order to make it possible to estimate the total cost of the operations. Such a study would require the co-operation of all countries. Table 2, which was prepared by the General Secretariat of OAPEC in 1977 on the basis of some manufactures in certain Islamic countries, shows what might be done.

In the absence of such a conspectus, at the present date, it is, nevertheless, possible to make some rough estimates by way of a first approximation.

Table 3 gives an attempt to evaluate the cost of projects after 1985, i.e. $65,700 million (1978 constant prices).

If we consider that capital goods represent 50 per cent of the cost of a project and that transfers of technology account for 15 per cent of that cost, the five branches of production represent:

$34.2 billion worth of capital goods;

$10 billion for the purchase of technology.

A systematic study of the basic industries as a whole would show that these two estimates should be multiplied by a factor ranging between 2 and 3 in order to obtain a preliminary measurement of the effects of the processing industries on the demand for capital goods in the Islamic countries.

Even now it is certain that these basic industries, which the Islamic countries have already decided or begun to develop, offer an opportunity to put together a powerful and diversified capital goods industry.

However, in spite of the magnitude of the demand to be met, it is not certain today that the Islamic countries can rely on these industries for the purpose of establishing a capital goods industry. The example of many countries of the third world and the ideas put forward in the Andes Pact in support of the establishment of a regional capital goods industry reveal the following factors which could limit a priori any possible participation by the industries of the Islamic countries in supplying the capital goods needed for the projects mentioned above:

The tendency of investors and administration to contract for engineering and equipment abroad; the existence of legislation permitting national basic industries to import equipment on especially favourable terms;

The inability, in several cases, of local or regional industries to submit complete tenders: insufficient information available to local enterprises concerning international invitations to submit tenders in other developing countries;

The restrictions imposed by sources of financing (e.g., tied loans);

The requirements imposed by sellers of licences that they be allowed to designate the enterprises which are to supply particular items of equipment;

The lack or inadequacy of the financial resources made available to local or regional enterprises for submitting proposals which can compete with those of foreign enterprises;

The use of production, trade and safety standards which are different and not co-ordinated among the Islamic countries. On the one hand, this makes these countries dependent upon their usual suppliers and, on the other hand, limits the possibilities of trade and production-sharing among them.

All these factors tend to inhibit the growth of a capital goods industry. As such, they should be taken into consideration in any forecast of possibilities for co-operation between Islamic countries.

Table 2. Estimates of present and future investments in petroleum processing activities
(in million US dollars)

Country	Refining		Petrochemicals		Fertilizers		Liquified natural gas (LNG) and Liquified petrolcum gas(LPG)		Total	
	Present	Future	Present	Future	Present	Future	Present	Future	1976	1985
Algeria	34	940	553	1,800	50	330	240	17,000	927	20,070
Libya	122	560	-	1,533	-	165	120	-	242	2,258
Egypt	144	60	-	626	40	930	-	300	184	1,916
Syria	55	240	-	-	9	165	-	-	64	405
Iraq	155	180	30	1,100	12	685	-	-	197	1,965
Kuwait	322	-	-	750	81	10	400	1,000	803	1,760
Bahrain	175	54	-	-	-	-	-	-	175	54
Qatar	6	100	-	540	55	256	43	360	104	1,256
United Arab Emirates	37	300	-	900	-	300	600	1,300	637	2,800
Saudi Arabia	493	1,600	-	3,225	30	330	250	11,000	773	16,155
Total	1,593	4,034	583	10,474	277	3,171	1,653	30,960	4,106	48,639

Source: "Regional Co-operation in Downstream Investments: The Case of OAPEC", Ali A. Attiga, Secretary General of OAPEC, October 1977, taken from Petrole et gaz arabes, 16 January 1978.

Table 3. An attempt to evaluate the total cost of the projects listed in table 2

Manufacture	Financial parameter (including utilities and downstream units)	Capacities after 1981	Total cost (million US dollars)
Distillation of crude petroleum	US$40 million for 1 MT/yr	80 MT/yr	3,200
Ammonia	US$120 million for 330 TT/yr	7,200 TT/yr	2,600
Ethylene	US$800 million for 400 TT/yr	7,200 TT/yr	14,400
Crude steel	US$100 million for 0.1 MT/yr	48.1 MT/yr	48,100
Total			68,300

Chapter II

NEEDED: AN EXCHANGE OF EXPERIENCE AND INFORMATION BETWEEN ISLAMIC COUNTRIES ON THE PRODUCTION OF CAPITAL GOODS

Since 1968 the efforts of several countries have brought them face to face with the numerous problems raised by the development of this industry with regard to heavy equipment.

Up to that time only four countries - Egypt, Turkey, Iran and Pakistan- had begun to manufacture light equipment: distribution transformers, electric motors, low-power diesel engines, etc.

The new phase (1968-1978) has added to Pakistani, Egyptian, Turkish and Iranian experience and has witnessed the beginning of Algerian, Malaysian, Indonesian, Tunisian and Iraqi experiments in this field.

Today it is difficult to measure the productive and technological capacities of the Islamic countries as a whole, for the following reasons:

- Firstly, many projects are still in progress;
- Secondly, it is not certain that the units which have been set up are able to supply the high-performance equipment for which they were planned.

A preliminary attempt to summarize the available information shows the limitations of the efforts made by the Islamic countries to date:

(1) The machine-tool industry has not reached the level of the Indian achievement, in spite of the efforts of a few countries like Iran, Pakistan, Turkey or Algeria.

(2) The production of heavy boiler equipment is only possible in Iran, while Egypt (El Nasr Boiler and Pressure Vessels, Giza) and Pakistan can supply light units.

(3) The production of industrial equipment in general (ISIC 3829) has begun in Algeria, Egypt (e.g. rolling-mill cylinders), Iran; Pakistan and Turkey can provide equipments for sugar-mills or cement plants.

(4) The manufacture of heavy power electrical equipment (motors, generators, transformers and switch gears) is limited to Pakistan, Turkey and Iran.

(5) Very few modern control and regulating equipments are being produced in the Islamic countries today (Turkey).

(6) There is still very little engineering capacity in the capital goods industry (Egypt, Iran, Pakistan and recently Algeria).

Certain projects should change this situation, although they will still not enable the Islamic countries to meet their capital goods requirements by 1990.

For example, we might mention the following:

- The machine-tool manufacturing projects in Indonesia (PINDAD centre for the manufacture of military equipment);
- The extension of electrical cable production (Syria, Cameroon, Turkey);
- The projected centre for the production of heavy equipment (CEMEL) in Algeria;
- The recent project development of equipment manufacturers for phosphoric acid plants in Morocco;
- The expansion of capital goods units in Iran;
- The creation of new engineering R-D capacities, with the UNIDO assistance in Iraq and in Indonesia.

This attempts to describe the present and projected state of the capital goods industry is necessarily incomplete and therefore open to criticism:

- In fact, and without linkage with the development of the process industries, all the other islamic countries developed since some years an "infant" engineering industry based
  - on light equipment (Tunisia, Morocco, Cameroon, Uganda, Malaysia)
  - and on maintenance and production of durable goods.
- Some Islamic countries are up-skilling their manpower in a specific exported oriented industry such as the "electronics industry" in Malaysia, however this industry is not directly related to his capital goods needs and production.

It is not these shortcomings, however, which make it necessary to organize the exchange of information between Islamic countries; if those countries wish to reduce their dependence in the matter of engineering and capital goods, they must inventory their capacities/potentialities with a view to pinpointing certain kinds of action to be decided upon in common.

Organizing the collection of information ought not to raise any logistical difficulties:

1. The Islamic countries have created two institutions enabled to carry out such an inquiry about what exists and what is planned, for example, as 1 January 1982:
   - the SESRTCIC, "The Statistical Economic and Social Research and Training Centre for Islamic Countries"
   - and the IDB, "The Islamic Development Bank".

   In respect to their knowledge about the Islamic engineering industry,
   - The Arab Union of Engineering Industry (Bagdad)
   - The Maghreb Centre for Industrial Studies (Tangier) and
   - The National Design and Industrial Services Co. (Pakistan)

   would facilitate this inquiry if they would be associated to
2. Either the SESRTCIC or the IDB may ask the UNIDO assistance for the preparation of the inquiry and the analysis of the answers, taking into account that UNIDO is already co-operating with Latin American countries in activities related to the development of their capital goods industry. 3/ *

However, the exchange of information between Islamic countries should not be limited to this type of information.

Many conferences held by UNIDO, especially the International Forum on Appropriate Technology (New Delhi, 20-25 November 1978) and the High Level Meeting on the REview of Technical Co-operation among Developing Countries (Geneva, 26 May-2 June 1980) have made it clear that the countries of the Third World will have to exchange their experiences of basic industries if they are to profit from the apprenticeship by each of them in order to create and develop this kind of industry.

For example, the importance of such exchanges has been emphasized in connexion with the following:

With regard to production:

e.g. management and maintenance of the machinery pool;

non-destructive testing;

3/ UNDP-UNIDO-ECLA Project (1978)
UNIDO-SELA Agreement (1980)

* In Annex to this document, a first pre-formulation of a questionnaire is proposed.

With regard to transfers of technology:
e.g. advantages and disadvantages of joint ventures for capital goods;

With regard to planning the production of capital goods:
e.g. advisability of beginning by importing equipment in the form of components for subsequent assembly;

With regard to the training of technicians, the establishment of technical research centres, etc.

Therefore, before the specific role of co-operation between Islamic countries is even tackled, the problem of exchanging information and experience calls for the establishment of an interconnecting network between the different Islamic organizations concerned with the development of capital goods: factories, research centres, training centres, etc.

The operation of such a network would reveal certain common questions which have to be set up and certain similar problems, the answers to which could be sought in collaboration between the main States concerned.

This collaboration would not replace the indispensable co-operation between Islamic countries; it would only add to the available resources and reference material with which to plan the creation and expansion of their capital goods industries.

Chapter III

NEEDED: CO-OPERATION BETWEEN ISLAMIC COUNTRIES IN THE CAPITAL GOODS INDUSTRY

Up to the present day, international industrial co-operation has been necessary whenever a number of countries have lacked the capacity to develop on a national basis:

The design,
Production and
Marketing

of particular kinds of industrial equipment or processes.

The CMEA countries and the Western industrialized countries have already demonstrated the effectiveness of such measures.

In as much as a gap exists between the Islamic countries' capital goods requirements and their present production potentialities, we now propose to consider whether there is room for co-operation among Islamic countries in:

The design
The production
Or the marketing

of capital goods to be manufactured in those countries in the future.

3.1 CO-OPERATION IN THE DESIGN OF CAPITAL GOODS

Since 1960 the developing countries have discovered that the development of their capital goods industry depends on their mastery of industrial engineering (see the reports of the Economic Commission for Latin America on the capital goods industries in Brazil and Argentina, 1960-1961).

Once engineering techniques have been mastered, it becomes possible to deal simultaneously with many other problems which are of decisive importance in designing capital goods, such as:

The choice of standardized industrial processes for manufacturing a given product;*

The choice of standards (e.g. materials) for the manufacture of equipment and for its use;

E.g.: For high capacity transformers, the choice of a very narrow limit of load loss calls for the use of materials which are not produced in developing countries,

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* For example, Morocco is standardizing the 12 new phosphoric acid plants to be built since the next ten years.

whereas the choice of a wider tolerance brings down the cost of equipment by more than the increase in operating costs and allows the use of materials which are manufactured in the developing countries.

Lastly, apprenticeship in the design of industrial equipment.

In as much as the international standardization oriented by the Western industrialized countries tends to become more and more exacting (cf. the types of steel required in the future for pressure vessels or electrical equipment according to the Common Market report on Steel Objectives, 1980-1985), the development of engineering techniques suited to local conditions and to the absorptive capacity of the Islamic countries' production system is becoming a vital necessity which very few countries in the world can meet unilaterally.

The development of intra-Islamic co-operation in this field would be an additional guarantee for the marketing and therefore the production of industrial equipment in these countries. The situation has not changed since 1960:

"Actually, the foreign engineers tend to specify the quality of raw materials and the design of the basic equipment so that it (the equipment) could be supplied by the highly developed industries of their countries".
(ECLA, 1961)

"The firms, or their engineers or their subsidiaries for industrial design, began to offer their services in writing the clauses of invitations to tender in such a way that they themselves then proved to be the best qualified to consider them. Thus the order is awarded before tenders are invited; firms which were unaware of these practices have learned this to their cost."
(Business International, 1976)

However, the concerted development of engineering and industrial design activities goes through the following phases:

Technological thinking and planning for the technological development of the Islamic countries with a view to:

Defining priorities and strategic requirements;

Taking into account the specific features of their economy (e.g. who is to plan the technological development of methanol and the desalination of seawater?);

Consultation for the development of the processing industries, which will be the main users of equipment in the future, and of the capital goods industries.

This last point should be emphasized: the present experience of the developing countries clearly shows that certain technical variables (industrial specifications) can determine the degree to which the industries of the Third World take up invitations to tender. A choice of specifications that makes due allowance for the potentialities of the Islamic countries' industries then becomes a necessity in order to consolidate their production of capital goods.

Lastly, the development of co-operation in the design of industrial equipment would open the way to innovations in transfers of technology. The Islamic countries have various opportunities, such as

The Association of South-East Asian Nations (ASEAN);

The Euro-Arab dialogue;

The Convention of Lomé

for studying technological joint ventures.

Such joint ventures would:

(1) Strengthen the capacities of technological centres in the Islamic countries and accelerate their apprenticeship in priority fields;

(2) Prevent the Islamic countries from becoming merely testing ground for the capital goods industries of the industrialized countries.

3.2 CO-OPERATION IN THE PRODUCTION OF CAPITAL GOODS

The present objective conditions for the development of capital goods dictate the principle of co-operation in their production:

- First (see chapter II), the Islamic countries have not hitherto planned to produce all the equipment needed for their projects in basic industries, and as a result suffer from major deficiencies;
- Secondly, the economy of each of the Islamic countries will not achieve, by the end of this century, the capacity:

  To cover the entire production of capital goods;

  To keep up with the development of manufacturing techniques and of more advanced technology. Taking into account these elements, the complementarity among future projects or/and joint ventures appears as a possible solution;

- Thindly, some Islamic countries can already provide some basic engineering equipment (cement plant, sugar mill, grain mill, ——) to least Islamic developing countries in a new approach of the co-operation among developing countries: The"Solidarity" co-operation scheme,

already applied for	Afghanistan	(1979)
	Bangladesh	(1980)
and decided for	Sudan	(1981)
	Upper Volta	(1981)
and	Mauritania.	(1981)

The investigation of possible fields of complementarity entails carrying out the work described in chapeters I and II, namely:

(1) Identifying projects in basic industries and evaluating their needs for equipment;

(2) Identifying and evaluating productive and technological capacities/potentialities in the capital goods field in the Islamic countries

(3) Exchange between Islamic countries concerning their experience in this industry.

This being so, notwithstanding the limitations of the information gathered for this report, it is possible to draw up an indicative list

of branches of production on which consultation meetings among Islamic countries could be soon decided:

(a) Machine tools and tooling for machine tools, in particular:

Apprenticeship in numerically controlled machine tools;

(b) Forges and foundries for major components (valves and pumps for oil and petrochemicals, for example) in particular:

The design and production of dies;

(c) Turbines for electric power generation, in particular:

Mobile gas turbines (10-30 MW);

(d) High-capacity electrical equipment and correlatively:

Insulators;
Magnetic metal sheet;

(e) Measuring instruments, and more generally control and regulating equipment, in particular:

Software for micro-processers applied to the oil and chemical industries.

The special feature of these branches of production is a low probability of development on a national basis until 1990-1995. Only co-operation between the Islamic countries will enable them to mobilize:

The financial resources,
The skilled personnel
And the technical research potential

needed for the absorption, adaptation, criticism and supersession of foreign technologies.

From this point of view, these branches of production constitute strategic factors for these countries in the following respects:

They are of decisive importance for the mastery of their accumulation of capital;

They are yardsticks of any effort at long-term co-operation.

In parallel, taking into account the different stages of maturity reached by the engineering industry among Islamic countries, there is room

to develop multilateral and bilateral consultations in view

- to allow each country to participate to the necessary expansion of this industry and its apprenticeship, and
- to achieve their mutual self-reliance for their basic needs.

Taking into account these objectives, consultation meetings among Islamic countries for complementarity, joint-venture, technological co-operation could be soon decided about

The development of pilot combined foundry and mechanical workshop [4/]

The design and the production of decentralized energy related equipment, in particular

- windpumps
- solar energy equipments
- biosmass treatment equipment
- mini-hydro equipments [5/]

As one of the possible means to develop co-operation to extend the production of capital goods would be the creation of joint-venture enterprises, «the concrete step of this intentions», proposed by the SESRTCIC in his review "Co-operation" (July 1980, Vol I, No. 4), « would be the signing, ratifying and implementing the General Agreement for Economic, Technical and Commercial Co-operation among Member States of the Islamic Conference, together with the Agreement on Protecion and Guarantee of Investments in Member States of the Islamic Conference following its finalization» .

4/ Such pilot plants are being/have been already established with UNIDO assistance in Yemen PDR, Sudan and Somalia. Such project may be also relevant for different Islamic countries in Western Africa.

5/ These consultations may receive the support, in particular, of the Follow-up Committee on Industrialization in Africa, and of the next "solidarity meetings".

However, the effectiveness of co-operation agreements for the production of particular kinds of capital goods depends on the measures taken for marketing these goods and on the implementation of those measures.

3.3 CO-OPERATION IN THE SALE OF CAPITAL GOODS

Even now, without waiting for co-operation agreements on long-term production, there are certain joint measures which would encourgage the development of capital goods industries within a co-operative approach.

These measures would cover the following three fields:

Tariff barriers,
Purchases by the public sector,
Loans for the export of capital goods.

Tariff barriers between Islamic countries

These should be sistematically removed for trade in capital goods, spare parts, or materials used for their manufacture (e.g. electrolytic copper) among Islamic countries.

Purchases by the public sector

Eighty per cent of the capital of the Islamic countries' basic industries is public; this ought to facilitate the promotion of capital goods production:

Through the planning of orders over a period of several years;

Through ad hoc co-ordination of the selection of procedures and engineering techniques according to the capacities of the Islamic countries' industries to absorb capital goods.

The participation of foreign capital is not a priori an obstacle to such measures; in any case the past experience of other developing view to negociate and to select their foreign partner. 6/ Loans for export of

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6/ In this respect Mexico, India and Brazil may offer a number of success and failures in their relationship with multinational firms; about failures, if:

"Impact on developing countries of restrictive business practices of transnational corporations in the electrical equipment industry: A case study of Brazil" (UNCTAD/ST/MD/9).

capital goods among Islamic countries. In as much as certain Islamic countries, in the light of their experience, do not give their preference to turn-key contracts for the purchase of their new plants, soon 1982/83 some Islamic countries should participate to some tenders and supply few equipment

Taking into account

- the impossibility for some countries to provide supplier-credits (ef. Turkey)
- or the absence of financial exports procedures,

the IDB appears as the principal instrument to allow such exports with its «foreign trade financing facilities». The development of a specific department within the IDB is now a need, in view.

- to pre-qualify Islamic enterprises for tenders;
- to assess some Islamic countries to evaluate offers;
- to compensate price differentials between offer from the infant engineering industry of Islamic countries and from high-advanced industrialized countries;
- to develop new financial schemes adapted to the actual situation among Islamic countries.

Nevertheless, such measures would not be enough. There are still major obstacles to be considered and removed through industrial co-operation. These are concerned mainly with:

Compatibility between national industrial standards;

Equipment guarantees.

Industrial standards have hitherto been laid down by the industrialized countries to keep pace with the mastery of tehcnology by their productive structures.

There is one initial problem: what level of complexity can the developing countries accept in the present state of their obsorptive capacities?

By joint efforts, it should be possible to set: 7/

Manufacturing standards,
Standards of application,
Standards of monitoring and,
Lastly, safety standards

Equipment guarantees present other kinds of obstacles in the way of co-operation between Islamic countries:

Firstly, there are no labels in these countries to guarantee the quality of the quipment manufactured;

Secondly, purchases of plant by Islamic countries are until now insured and reinsured by the large international companies wich are specialized in this kind of transaction.

The result is that the Islamic countries may be definitely dependent on foreigh - (most often Western) - mechanisms and guarantees. In order to reduce that dependence and to promote the development of their capital goods industry, the following special measures should be considered:

1. They should create a quality label to be awarded by a tripartite board composed of equipment producers, users and leading figures from the world of research and technology; all pre-qualified enterprises should necessarily receive this label for one product at least;

2. The Islamic Conference Secretariat and the IDB should begin consultation meetings with Arab insurance groups such as

   - "AWRIS" (Arab War Risks Insurance Syndicate) and

7/ The electrical industry might serve as a test for co-operation in this field in view of the problems of co-ordination/co-operation raised, for example, by:

The choice of voltages;
The choice of tolerances for load losses;
The choice of insulators and, more generally, materials.

- "ARIC" (Arab Reinsurance and Insurance Group),
in order to study possible "insurance" and "reinsurance" schemes and procedures to be developed to facilitate autonomous decision from Islamic countries to import and use certains Islamic equipment (mostly complete plant such as sugar mill, grain mill, cement plant, mini-hydro systems).

The implementation of these measures would remove the last material obstacles to the concerted development of the capital goods industry in the Islamic countries.

Annex I

Evaluation of the actual and projected capacities and abilities of the heavy engineering industry in Islamic countries.

The following structure of the capital goods industry is proposed:

- x machine tools
- x capital goods for intermediate industries, such as
  - . forgery and foundry products
  - . pressure vessels
  - . boilers
  - . turbines
  - . heavy electrical equipment
- x capital goods for the consummer goods industry such as
  - . textile equipment
  - . plastics transformation machinery
  - . ——
- x capital goods common to all activities, such as
  - . electronic equipment
  - . maintenance facilities
  - . furnaces
  - . valves, pumps, compressors
  - . engine motors
  - . light electrical equipment

An inquiry into the actual and projected capacities and abilities in each Islamic country, by means of a questionnaire, such as the following:

Type of Capital Goods | Product | Country

existing
projected

Identification

Name of the company | Ownership

Number of employed

Number of engineers

Location

Year of construction

Year of inception of production

Characteristics of production

- Annual physical output

  (units/tons/power/man-hours/——)

- maximum size of the product
- complexity
- main equipment and physical capacity
- origin of the technology
  - effect on trade possibilities
- standards applied
- testing and design facilities
- research and development programme

Main users of the product

Domestic users

Foreign users

Annex II

Evaluation of the demand for heavy capital goods mainly from processing industries

1/- Imports of capital goods since —— by each Islamic country

NB To be prepared using SITC nomenclature

(part of 69, 7 and 861 index numbers)

2/- Evaluation of the demand for heavy capital goods from 1982 to 1990

Inquiry into projects in certain activities by answering the proposed questionnaire (to be revised)

List of activities

- Energy
- The Mining Industry
- Water supply
- The Building - Materials Industry
- Fertilizers
- Petrochemicals and Chemicals
- Basic metals
- The Food Processing Industry
- Metalworking
- Machine tools
- Electrical Equipment
- Telecommunication
- Textiles
- Transportation

Annex II (cont'd)

Activity: **Project:** **Country:**

Identification

Name **Ownership:**

Location

Year of construction

Size/capacity/power

State of the project as of 1/1/82

State of the tenders for

Engineering

Technology

Equipment

Civil engineering works

Part reserved to domestic suppliers:

Engineering **Relationship between domestic suppliers and foreign suppliers**

Technology

Equipment

Civil engineering works

Financial procedures for Engineering, Technology, Equipment, Civil engineering works

National funds

Supplier-credits

Commercial loans

Arab/Islamic sources

World Bank/IFC/IDA

Other international agencies